URBAN MOBILITY: TRANSFERENCE AND ATLANTA'S TRANSIT

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by

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Urban Mobility: Transference and Atlanta's Transit

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South of the North, yet north of the South, lies the City of a Hundred Hills, peering out from the shadows of the past into the promise of the future. I have seen her in the morning, when the first flush of day had half-roused her; she lay gray and still on the crimson soil of Georgia; then the blue smoke began to curl from her chimneys, the tinkle of bell and scream of whistle broke the silence, the rattle and roar of busy life slowly gathered and swelled, until the seething whirl of the city seemed a strange thing in a sleepy land.

W.E.B. DuBois, The Souls of Black Folk

This thesis is dedicated to my dad, James Futrell, who also built upon ash.

I would like to express the utmost appreciation to my mother, Janet Futrell, for listening patiently and insisting on her personal interest as I thought aloud.

Richard Dagenhart has been a superb guide along the path the thesis has traveled, encouraging me to explore my interests. David Green and Michael Gamble have generously contributed their expertise, input, and time.

I would also like to thank Chris Chovan at Atlanta Regional Commission. Jason Morgan at MARTA, David Cassell and Shaun Green at Georgia Regional Transportation Authority, and Larry Stokes at Cobb Community Transit all graciously contributed shapefiles to my research. Jacob Davis provided his personal research to serve as a base for mine.

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SUMMARY

The research segment of this thesis creates the first comprehensive repository of the current and proposed elements of public transit that will potentially operate in Atlanta. Beginning with a base GIS map of Atlanta Regional Commission's [ARC] Regional Transit Plan – Mobility 2030, other GIS shapefiles from MARTA and Georgia Regional Transit Authority [GRTA] were added to complete the map of what Atlanta's public transit might soon become. Working within this framework, the analysis provides the potential locations for ten nodes of transference located within Atlanta and its outlying areas - all classified by their relative locations within the city. This thesis analyzes methods of connectivity within these nodes and attempts to arrive at successful conditions of transference between various transit modes; resulting in a series of conceptual design proposals that create both modular efficiency and a standardized aesthetic language.

CHAPTER 1

INTRODUCTION

Atlanta's public transit system is the key to the city's survival as a thriving and burgeoning metropolis. The majority of Atlantans now realize the city cannot sustain itself as it currently exists and have begun asking how this situation might improve. The backbone of the transit system is MARTA's heavy rail system – from this, the transit proposals branch out into areas not currently serviced. The region's commitment to the implementation of a comprehensive transit strategy has been almost nonexistent; to the extent that MARTA is the only public heavy rail system in the country that does not receive state funds. For the individual Atlantan, the issue is the improvement of the transit network itself – the way in which the transit paths traverse the city and relate to one another to form this network. It is essential to the successful operation of the transit system that the network deal with interconnectivity of individual elements, giving clarity to what before may have been an unrelated, unstructured web of various segments. The fluidity of the path is accompanied by the stagnation of the points along it; this is where transfer occurs. The meeting of two points is where connection is made to other paths, and ultimately, this is how people get through the city successfully. More importantly, this is how Atlanta will sustain itself.

It can be argued that the fundamental element of a transit system, as it relates to the individual user, is the fluidity of movement through paths from the point of origin to the destination. The feasibility of this flow is dependant on the relationships between points along the paths. The interstitial space between related points is what this thesis investigates – the nodes of transference. Developing a methodology for weaving various forms of transit connections to create places of successful transference – keeping in mind the identity of the place while making inferences about what the site should become in the future – is the goal of the thesis.

The research segment of this thesis creates the first comprehensive repository of the current and proposed elements of public transit that will potentially operate in Atlanta. Beginning with a base GIS map of Atlanta Regional Commission's [ARC] Regional Transit Plan – Mobility

2030, other GIS shapefiles from MARTA and Georgia Regional Transit Authority [GRTA] were added to complete the map of what Atlanta's public transit might soon become. Working within this framework, the analysis provides the potential locations for ten nodes of transference located within Atlanta and its outlying areas - all classified by their relative locations within the city. This thesis analyzes methods of connectivity within these nodes and attempts to arrive at successful conditions of transference between various transit modes; resulting in a series of conceptual design proposals that create both modular efficiency and a standardized aesthetic language.

The population that contributed to the post WWII population boom is changing the face of demographics in the city – empty-nesters and seniors lead the way. This group, along with the large young adult population, is balancing families with children. By 2030, the population

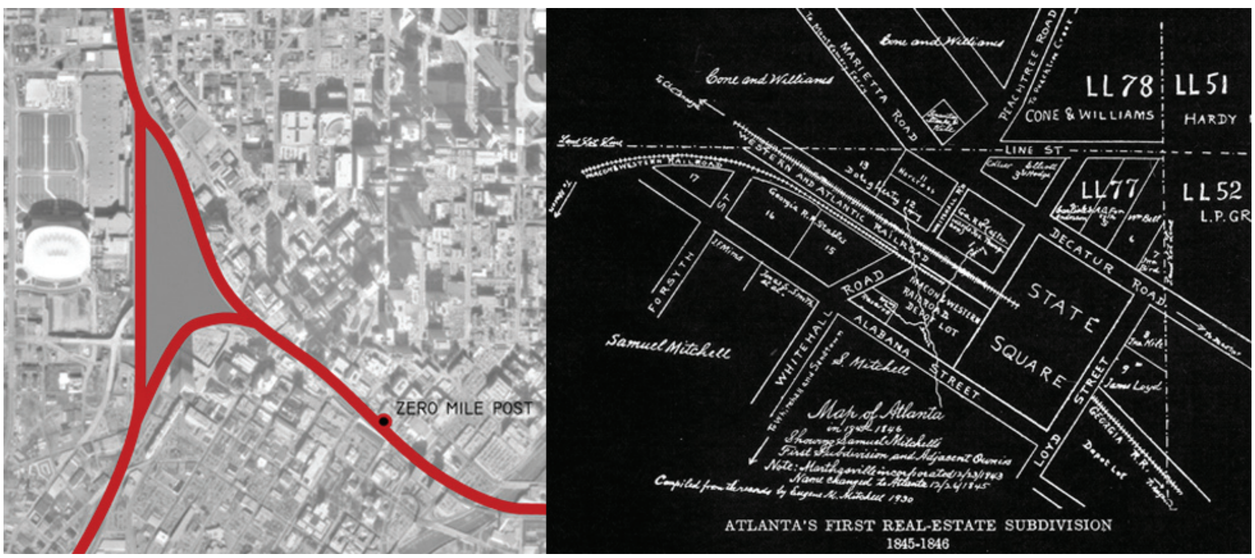

Figure1.1: Location of Zero Mile Post and Samuel Mitchell's Map of Atlanta's First Real Estate Subdivision

Figure1.2: Atlanta's Rail Pattern in 1850 and Taking Cotton to Market in the 1870's

over age 65 will triple and those over age 45 will double. Households with young children will decrease by one third. Atlanta is becoming a place where people demand a culture based on walking, biking, and public modes of transit. Will it be supplied?

Atlanta's urbanity is rooted in transference. Rail lines are the arteries around which Atlanta's urban identity formed. Atlanta's formative history is deeply rooted in the railroad era - the city owes its very existence to the railroads. Atlanta has functioned as a gateway to the Southeastern US since it's inception in 1837. Colonel Stephen Harriman Long selected the site as a generally advantageous spot for the railroads to meet in Georgia as they extended from the Eastern seaboard. At the time, Atlanta was called Terminus since it was the end of these rail lines – at the intersection of Five Points.

The reasons for railroads to run through Atlanta, forming its identity as a node of transference, were both economic and geographic. The Eastern Cotton belt needed a way to get goods to the ports of Savannah and Charleston. Trade in the 1840's was still adapting to rail, mainly viewing it as a way to get goods from inland cities out to major ports. Atlanta existed for the benefit of other cites as a convenient meeting point. As the rail traffic increased, Atlanta obtained an identity of it's own as industry followed the rail. There is a direct relationship between the proliferation of routes of transit through Atlanta and its growth into the economic capital of the Southeast. The chief asset to Atlanta is its location – its potential as an urban center was realized through the development of railroads. While most trade centers are near navigable water and reached easiest by valley, Atlanta contrasts with its interior location and approach via ridge.

Geographically, Atlanta is an interesting case as a transportation center. The southern territory is enclosed by navigatable water – the Mississippi River to the West, Ohio and Potomac Rivers to the north, the Atlantic Ocean to the east, and the Gulf of Mexico to the south. Atlanta is centrally located within these passages of trade. If two axes were drawn, one to illustrate the path between New York and New Orleans and the other Chicago to Miami, they would intersect in the North Georgia Highlands – 75 miles north of Atlanta. This point of intersection has become the central core of the southern territory. The landforms that surround Atlanta have much to do with its usefulness. Considering the Appalachian Mountains as the structural backbone of the territory, Atlanta is in the Piedmont plateau just southeast of the

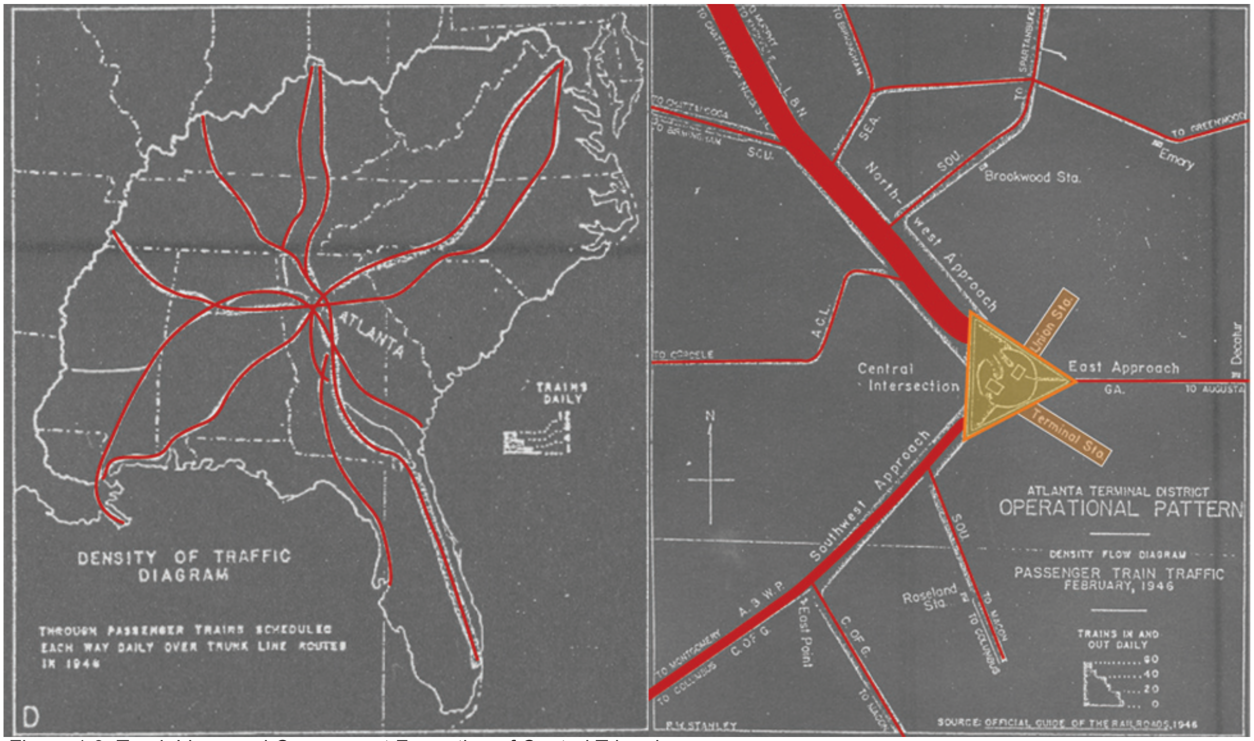

Figure 1.3: Trunk Lines and Consequent Formation of Central Triangle

mountain range. As the mountains terminate just northwest of the city, Atlanta remains very accessible. Since the early railroads were laid out based on ease of land use and watershed routes, Atlanta was perfect as a junction point. It became the first city with connections to the Eastern seaboard that lay west of the Appalachians. Atlanta thrived on its energy as a regional distribution center.

Fifteen rail lines run through Atlanta, eleven of which function as trunk (regional) lines. The other four lines function as local lines. In 1861, trunk lines ran N-S and W-E through the city. By 1890, the radial arrangement of the rail lines was taking shape – the city was becoming connected in every direction. Each line made connections with entirely different towns and rural areas. After the damage of existing railroads was repaired following the Civil War, the new railroads completing the radial pattern were not as dependant on terrain in their placement due to improvements in engineering. Gradually the country came to depend on trains more than ships, and emphasis was placed on interior connections rather than ports on the periphery. Transportation in Atlanta has always involved collection, distribution, and interchange of both goods and people.

The urban layout of Atlanta began with the framework of rail. Atlanta's core is formed by

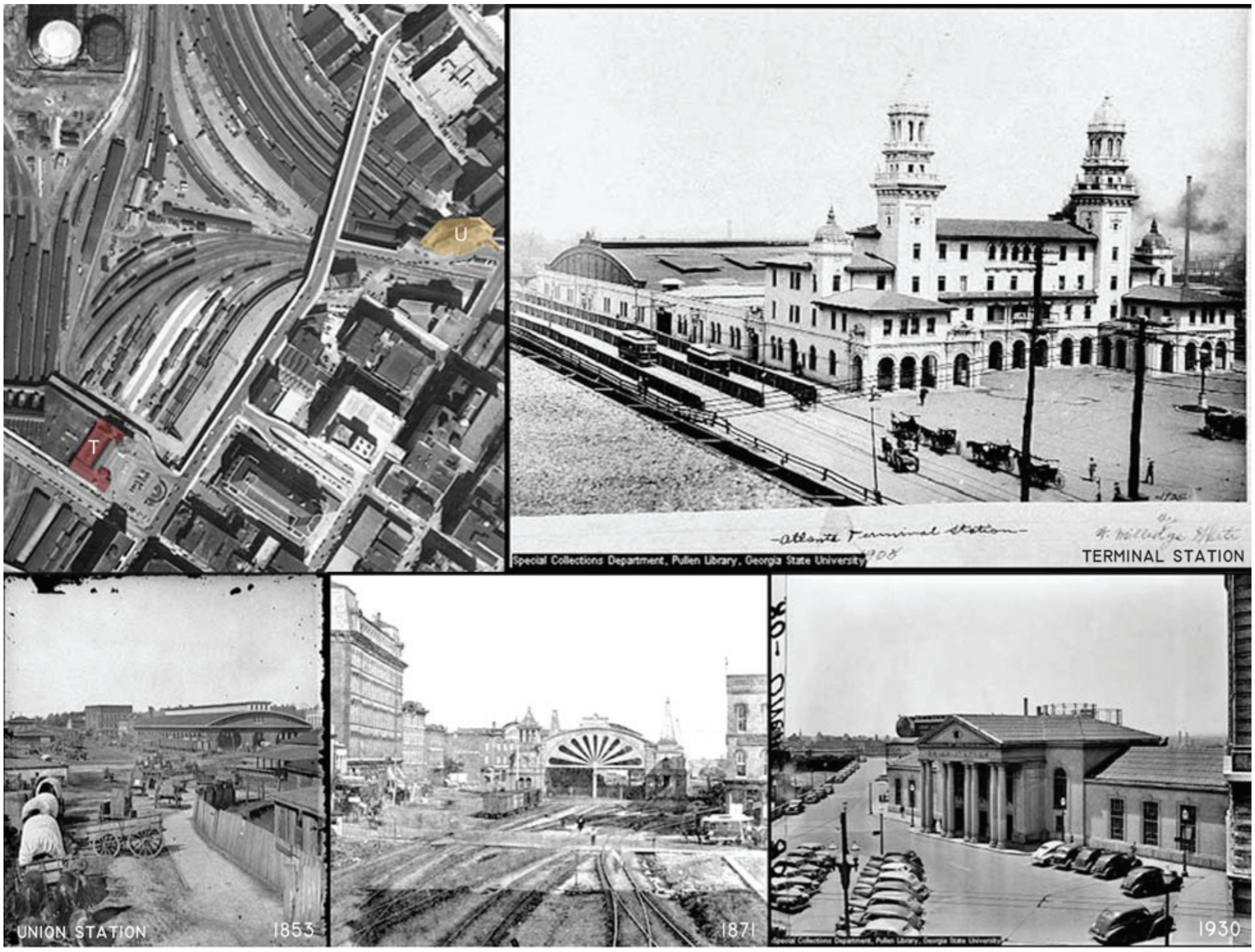

Figure 1.4: Terminal and Union Stations

three groups of trunk lines that run into the central business district of the city. The three trunk groups approach from the northwest, southwest, and east, following the original watershed routes to trisect the metropolitan area. This central triangle is the terminus and the transfer location – where the lines meet, switch, and are serviced. In Atlanta's early years, the rail lines formed the center of the city – streets converged towards the tracks. After a rapid period of growth following the end of the Civil War, it became apparent that Atlanta should have more fluid circulation through the central business district of downtown. The gulch was the solution – a network of viaducts bridging over the tracks to connect streets. Planning began in the early 1900's, and the project took nearly 25 years to complete. By moving the central business district moving up one level, this framework formed the present-day underground Atlanta.

Historically, Atlanta had two train stations - Terminal station to the southeast of the triangle and Union Station on the northeastern side. Union Station was first built in 1853 and rebuilt in 1871 and 1930. It was torn down in the early 1970's. Terminal Station was built in 1905 and torn down in 1972. Belt lines run along the periphery of the city, since transit overload in the core causes congestion. These serve as transfer routes, and they have led to new development of industry along their paths. The way the rail lines run through and around the city is a result of the need for transference.[1]

Atlanta's inland location has kept the city in the position of transferring massive amounts of people through the city – via train as well as through public transit, plane, and highway. In 1871, Atlanta began using horse-drawn streetcars – eventually leading to the addition of the electric streetcar to the city's plan in 1891. The first was located along Edgewood, a street created to connect Inman Park to downtown Atlanta, in what was then considered a suburban community. The streetcar was integral in Joel Hurt's plan to make the Atlanta suburbs a more viable living option – without this transit connection, location outside of the city would have been impossible. The suburbs at this time were shaped by the development of the electric streetcar. Other suburbs including Ansley Park, Candler Park, and Druid Hills were formed due to the ease of the streetcar. Chartered in 1886 and again in 1889, the Atlanta and Edgewood Street Railroad Company was responsible for running the system. The last trolley ran in April of 1949.

Figure 1.5: Atlanta Transit Timeline [1871-1949]

Trackless trolleys were in operation until 1962. These trolleys are powered by two overhead wires like a streetcar, but they run on rubber tires. The discontinued usage of these trolleys freed the streets with the removal of wires.[2]

MARTA was created in 1965 - purchasing the Atlanta Transit System [consisting of buses only] in 1972. From that point on, MARTA operated the bus system in Atlanta. The first MARTA heavy rail line, the East line, operating between Avondale and Georgia State opened in 1979. Construction began later that year on the airport station which marked the main period of rail development in the 1980's.

In 1982, Peachtree Center, West End, Arts Center, and Midtown stations opened. By 1984, Lindbergh Center, Lenox, Brookhaven, Oakland City and Lakewood/ Fort McPherson stations had all opened. In 1986, East Point station opened on the south line, and Chamblee temporarily marked the end of the Northeast line. Bankhead station began service in 1992, and Kensington and Indian Creek formed the current end of the Eastern line – the first time rail was extended beyond the I-285 perimeter. The Olympic Games in 1996 pushed many of the plans forward. The North line, including Buckhead, Medical Center, and Dunwoody Stations, was completed. For the first time, MARTA rail included all 3 Atlanta jurisdictions – City of Atlanta,

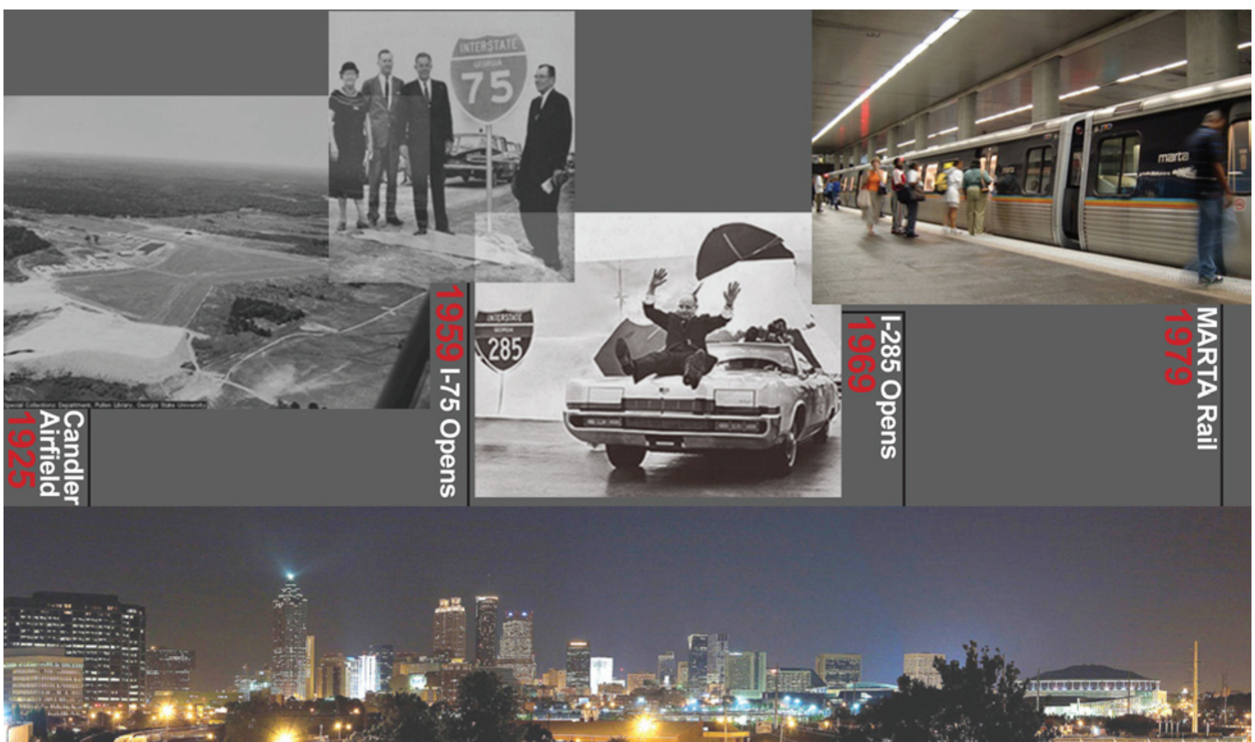

Figure 1.6: Atlanta Transit Timeline [1925-1979]

Fulton County, and Dekalb County.

In 2000, MARTA completed two new stations along the North Line at Sandy Springs and North Springs. Lindbergh City Center, a transit-oriented development (TOD) including office towers, parking decks, retail, and condominiums, opened in 2002. This marked a beginning for Atlanta's interest in linking public transportation to community development. After this, attention turned back to improving the bus system. The Blue Flyer Service, the first express, limited-stop service in MARTA's system, began in 2003. The current rail system includes two lines - North Springs and Doraville to the Airport and H.E. Holmes and Bankhead to Indian Creek. The rail system is the framework from which many of the new transit proposals stem.[3]

Candler Airfield, purchased by the city in 1925, was the beginning of a new method of collection, distribution, and transfer of people in Atlanta. The airfield was originally named after Coca-Cola magnate Asa Candler. By 1939, it was renamed the Atlanta Municipal Airport. When it was declared an air base during WWII, the airfield doubled in size. By 1942, the airport was the busiest in the country. While it held the same title in 1957, it was also considered the busiest in the world between noon and two pm. During the 1970's, it was renamed after Mayor William B. Hartsfield, and the terminal was rebuilt - becoming the world's largest terminal to date. By 1988, the MARTA rail was extended to the airport – finally linking the two main methods of transit in Atlanta. Holding the title of the world's largest busiest airport from 1998 until 2005, currently Atlanta is second to Chicago in worldwide passenger volume.[4]

The Georgia interstate system accounts for 27 percent of total traffic, while only 1 percent of total miles of Georgia's roads consist of interstates. In 1938, the Federal Highway Administration was formed to research the feasibility of crossing the continental United States. The Federal Aid Highway Act, passed in 1944, approved a plan to create a network of 40,000 miles. The planning of Georgia's highways began in 1940, and construction began in 1944 - highways were built that would later grow into interstates. Plans concentrated on the metro Atlanta area to relieve congestion, while radiating patterns were designed to join Atlanta to other cities. The first Georgia interstate marker was unveiled along I-75 in 1959, while I-285 opened in 1969. Georgia has 1,244 miles of interstates, and the first complete interstate opened in

3 www.itsmarta.com, Metropolitan Atlanta Rapid Transit Authority. Nov. 10, 2006.

4 www.atlanta-airport.com, Hartsfield-Jackson Airport. Jan. 10, 2007

1977.[5]

Transit systems depend on successful transfer; their effectiveness is dependant upon connection and consequent space formation. The current situation in Atlanta's urban fabric creates a need to reconnect its residents through public transit - many governmental, civic, and private groups are formulating plans for transit development. Transit plans within the city, the suburbs, and between the city and suburbs create an interesting situation. As various forms of mass transit are proposed, how will these modes come together? With Atlanta's roots in transit and transfer of people, it raises the question – how will these modes meet and form connections, and what type of spaces will they create?

5 www.dot.state.ga.us, Georgia Department of Transportation. Nov. 30, 2006.

CHAPTER 2

ANALYSIS OF RELATED PROJECTS

2.1 'U-Turn Studio'

'U-Turn Studio,' defining the site as a traffic landscape, proposed a few responses based on this assessment. A few of their experiments deal with architecture directly linking with infrastructure – architectural parasites latching on to interstates. The 'Flyover Truck Stop' uses off-ramps and overpasses as ends in and of themselves. The 'Highway Motel' connects to the edge of the interstate as a 24-hour stop.

• Defines inter-city space as traffic landscape.[6]

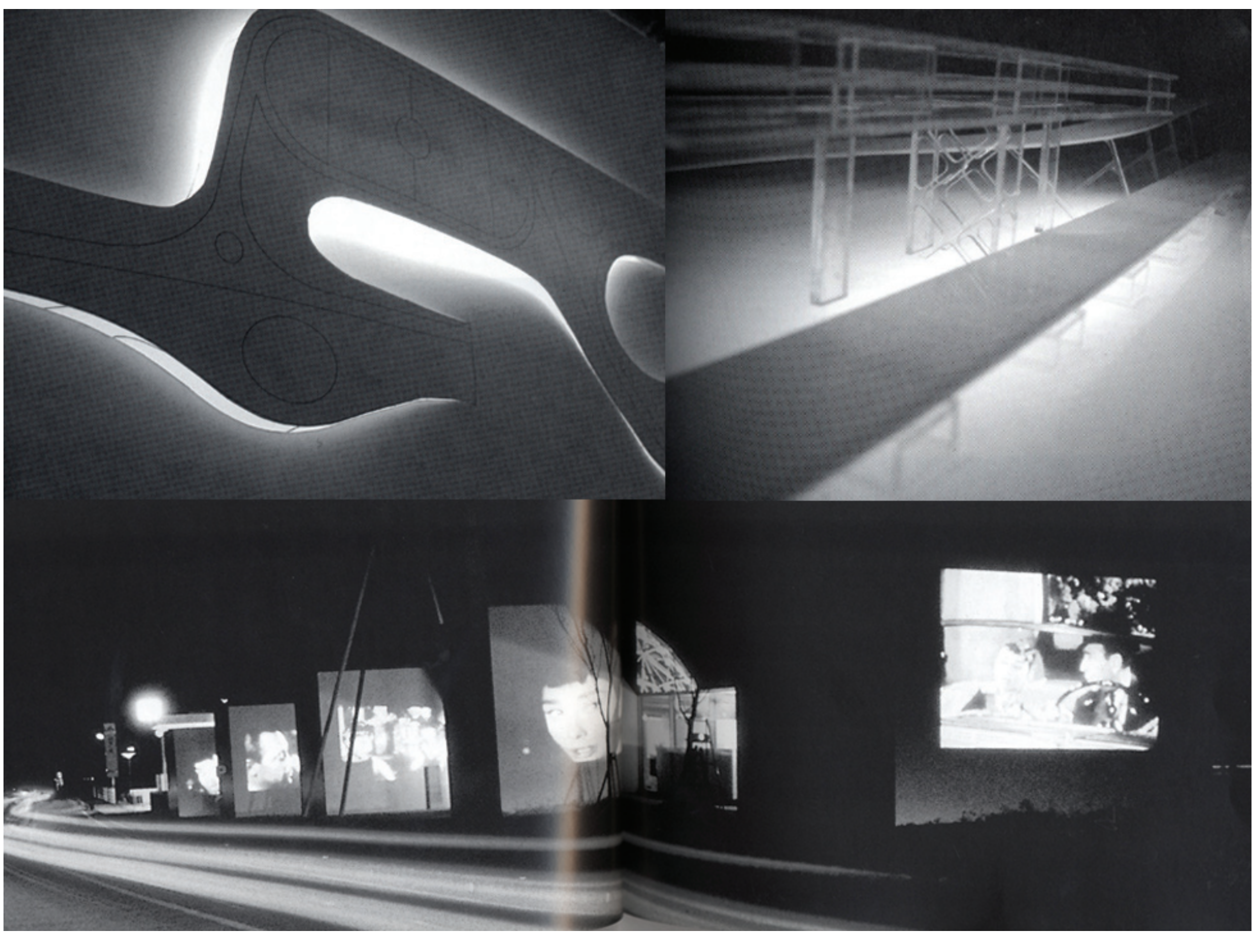

Figure 2.1: U-Turn Studio and Restore Station - Public Architecture Attaches to Interstate

6 Nadal, Sara, and Carles Puig. Planning the Periphery. (Barcelona: Gustavo Gili, 2002) 46-47.

2.2 'Restore Station'

'Restore Station' exploits the reality of peripheral architecture – allowing the functional 24-hour rest stop and billboard to become one. The buildings include parking facilities, shops, and cafes as the static order while images are continually projected onto the wall surfaces – dynamically referencing movement of the highway.

- Analyzes interstate architecture, reducing it to the 24-hour rest stop and billboard.[7]

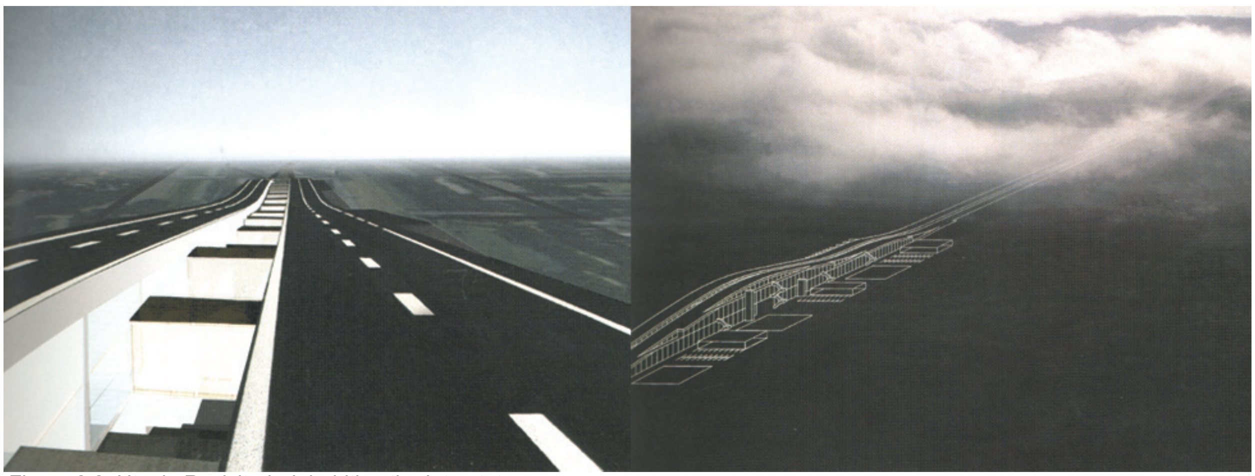

Figure 2.2: Utopia Revisited - Inhabiting the Interstate

2.3 'Utopia Revisited'

'Utopia Revisited' brings building, infrastructure, and landscape into one piece of design. The typology is a tunnel rowhouse, residing in the verge area of a city - the interstate - as opposed to defaulting to the suburbs outside of the verge. The road is lifted from its landscape forming terraced hill dwellings, and at the same time it benefits the driver with hills that create views the Dutch do not often have due to the flat landscape.

- Problematizes the infrastructure of interstate as non-inhabited, under-used space.[8]

2.4 'Public Domain and the Dispersed City' reinterprets the Moreland Exchange in Atlanta at I-75 and I-285 as an urban park – making interstate connection a public monument of sorts. The design includes a network of paths and surfaces that define space at varying levels. Utility paths form the second network, and plantings form the third network. The park operates within two frames of time – 24-hour everyday activity and choreographed events. These two

7 Nadal, Sara, and Carles Puig. Planning the Periphery. (Barcelona: Gustavo Gili, 2002) 48-52.
8 Nadal, Sara, and Carles Puig. Planning the Periphery. (Barcelona: Gustavo Gili, 2002) 53-57.

interact together to form overlap of usage. The project seeks to bridge the non-space between the interstate and the city at a human scale.

• Problematizes interstate interchange as a bridge between city and suburb, a non-developed space with no reference to human scale.[9]

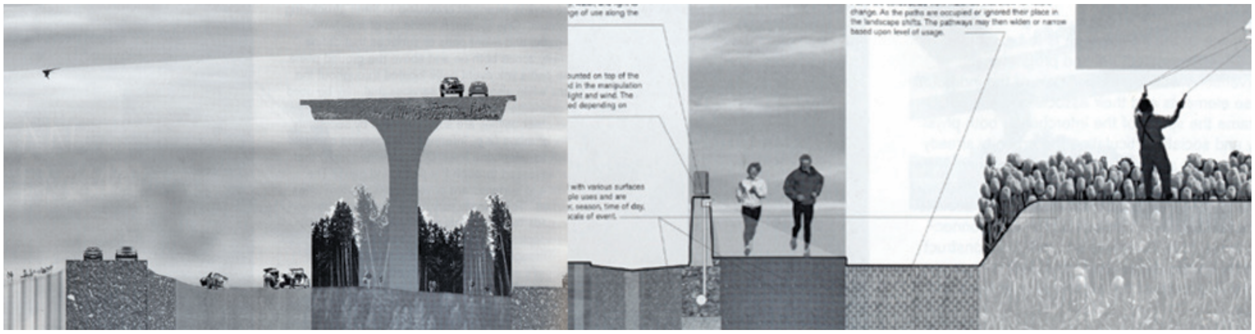

Figure 2.3: Public Domain and the Dispersed City - Inserting Public Space into the Interstate

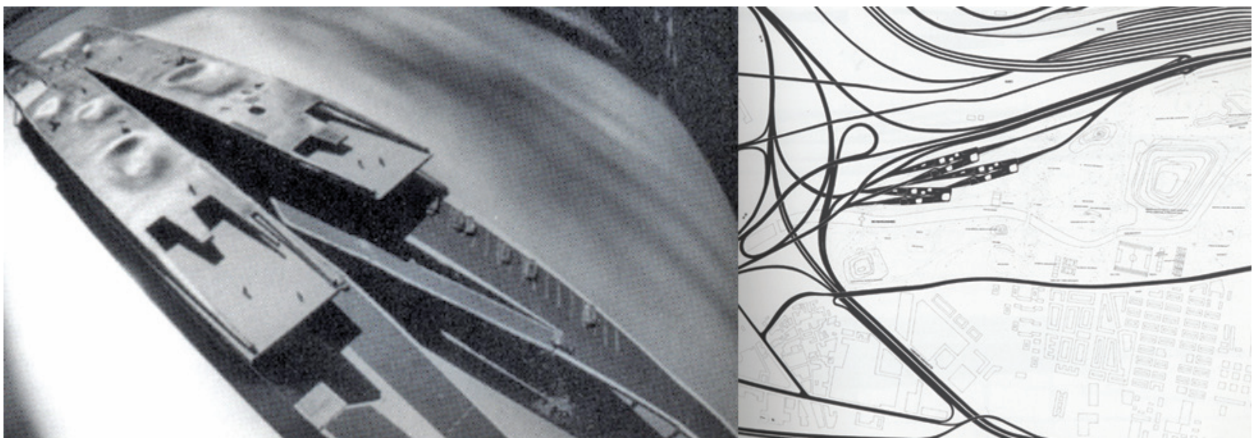

Figure2.4: Artificial Sea Insertions - Inserting Public Space into the Interstate

2.5 ‘Artificial Sea Insertions’

‘Artificial Sea Insertions’ is a parasitical method of inhabiting interstate infrastructure. Low-cost, degraded land is given new life - leading to new ways of inhabiting the city. Where the interstate reaches levels of greatest intensity, buildings occur as a continuation of these networks – differing in that they involve geometry of deceleration.

• Identifies the unused space where interstates meet as potential for a new kind of urban inhabitation.[10]

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9 Herrmann, Hans. “Public Domain and the Dispersed City.” Architecture Journal Sep. 2004: 192-199.

10 Nadal, Sara, and Carles Puig. Planning the Periphery. (Barcelona: Gustavo Gili, 2002) 46-47.

2.6 'Transient Field'

'Transient Field' allows for variability within an urban square. The kit of parts includes sliding floor panels that allow for connection to the grade below or an even groundscape at grade. The square has multiple configurations – entirely open to below, entirely closed connecting to the main level, or a mixture of both. The project also includes a device for connecting pedestrian and car storage. Underground parking becomes the infrastructure for part of the pedestrian square as the top 'loop' forms the edge of the public pedestrian space.

- Problematizes the urban square as a place unable to accommodate transitions.[11]

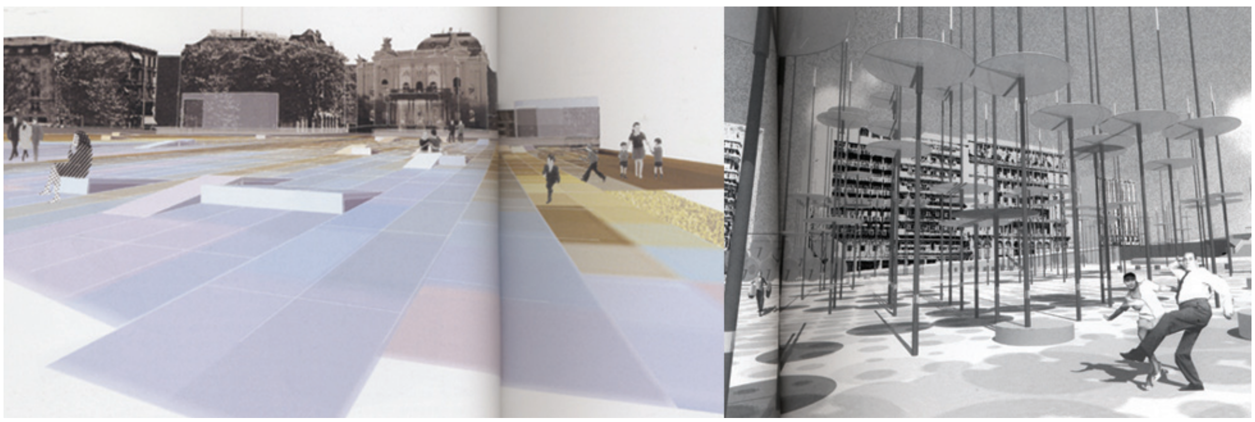

Figure 2.5: Transient Field and Urban Forest - Creating Public Space with Potential Variability

2.7 'Urban Forest'

'Urban Forest' is a method of creating translucent enclosure – forming a semi-permanent, large public space. It is mobile in nature – the kit of parts contains a pole and hat configuration that can be removed and relocated depending on need within the city.

- Problematizes the stagnant nature of the enclosure of public spaces.[12]

2.8 'Millennium Park Bike Station'

'Millennium Park Bike Station' in Chicago accommodates bikers as well as their bikes. It is built atop a car parking garage as sort of a lighted extrusion. Located near mass transit, it provides shower facilities so bikers can get clean before going to work. The system includes double-stacking racks for 340 lockers.

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11 Hoete, Anthony. Reader on the Aesthetics of Mobility. (London: Black Dog, 2003) 50-53.

12 Hoete, Anthony. Reader on the Aesthetics of Mobility. (London: Black Dog, 2003) 46-49.

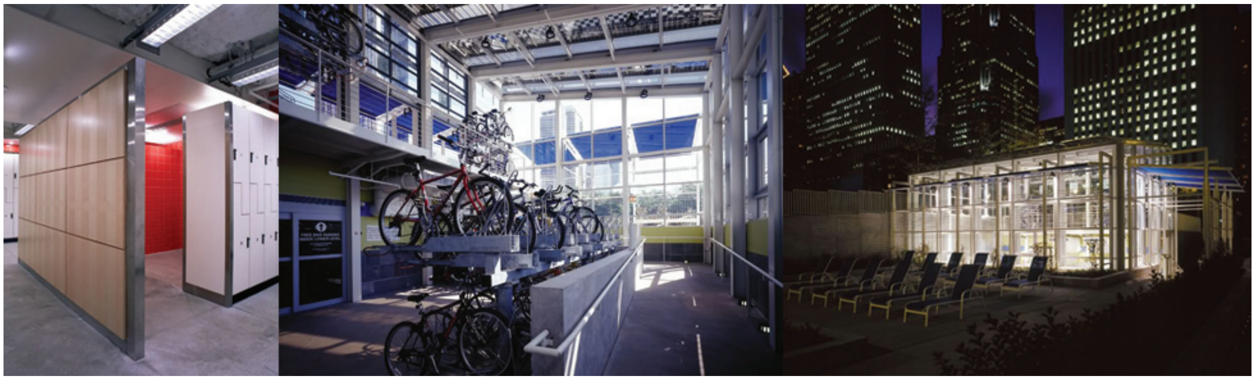

Figure 2.6: Millennium Park Bike Station - Bike Parking as Urban Beacon

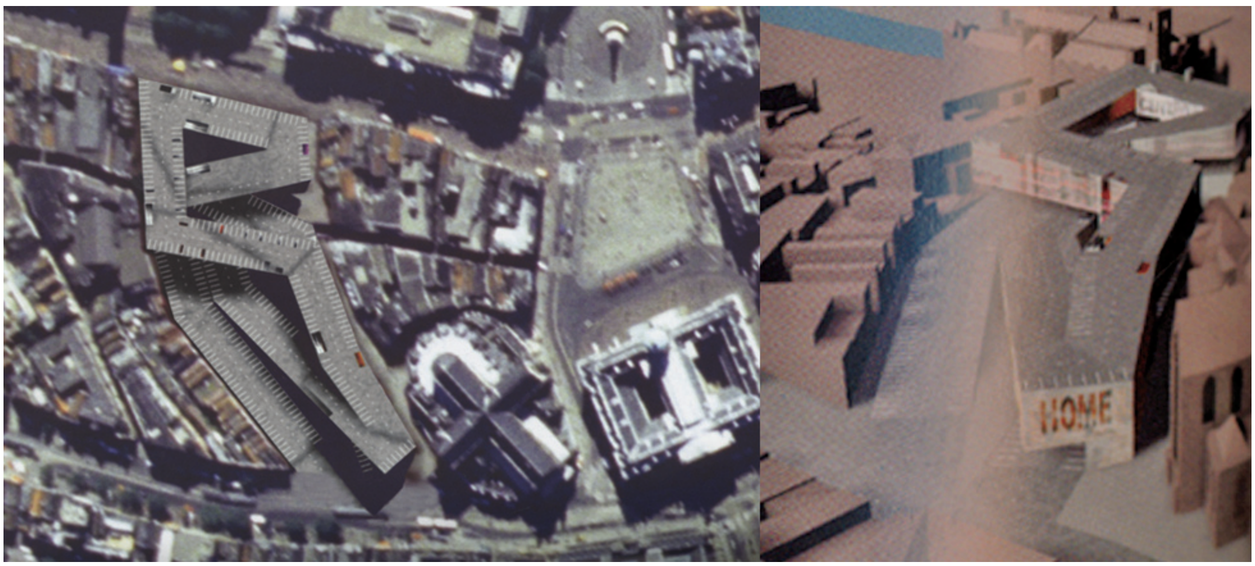

Figure 2.7: Parkhouse/ Carstadt Merges Roof and Parking

2.9 'Parkhouse/ Carstadt'

'Parkhouse/ Carstadt' joins architecture and infrastructure into a single element. Roofing and roadway become one building. The project works within parameters of slope and the total building height to arrive at a roof composition which forms the roadway. In this way, a fixture typical to the periphery moves into the city center. It is involved in an act of contortion – fitting itself into the urban setting via folding, subtraction, and extrusion.

• Analyzes the existence of the parking structure within the urban setting considering its space and program requirements.[13]

13 Nadal, Sara, and Carles Puig. Planning the Periphery. (Barcelona: Gustavo Gili, 2002) 98-103.

Figure 2.8: Park and Ride - Parking is Reduced to Signage


Figure 2.9: Two Tram Connection - Transit Meeting at Grade Change

2.10 ‘Park and Ride’

‘Park and Ride’ is a site in Amsterdam created for parking – beside Station Sloterdijk which is partially under train and metro flyovers. The concept includes ground-level parking with clear layout and high quality. The design is based on a web of metal poles and cables from which signage is hung.

- Defines parking as reduction to effective signage.[14]

2.11 ‘Two tram connection’

‘Two tram connection’ explores issues in grade change to effectively transfer from one tram line to another that is one level below through the usage of stairs and escalators. Streets form a corner on one side of the site, while office buildings border the other. The project successfully references the streets as it connects transit, pedestrian paths, and offices.[15]

14 Bakker, Daan. Architecture in the Netherlands. (Rotterdam: NAI, 2004-2005) 22-23.

15 Bakker, Daan. Architecture in the Netherlands. (Rotterdam: NAI, 2004-2005) 32-33.

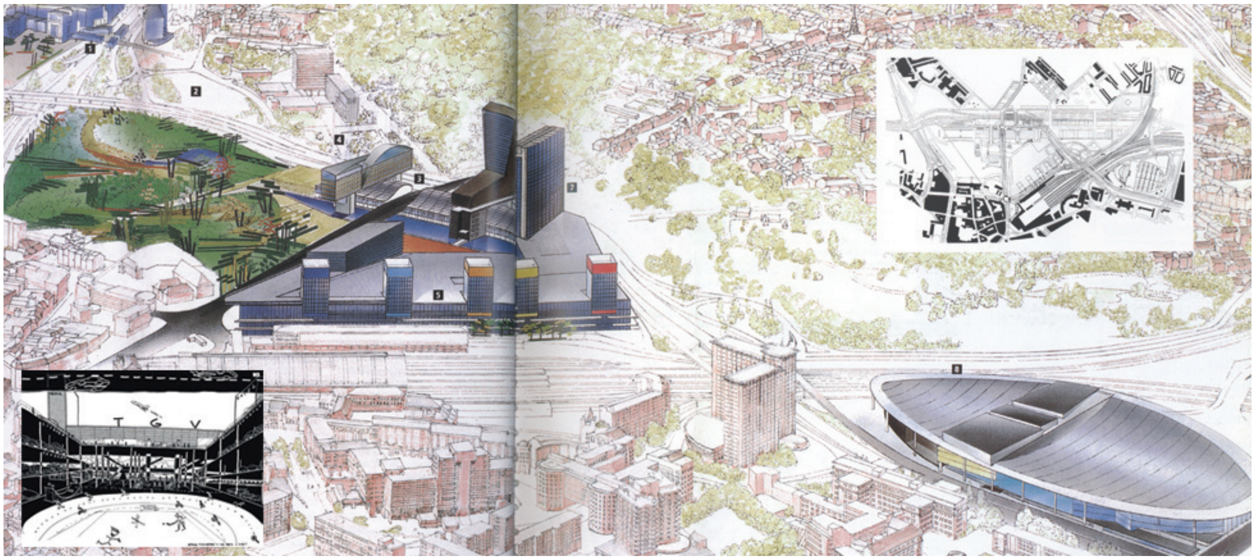

Figure 2.10: Euralille

2.12 OMA_ Euralille Masterplan [1994]

Lille, France

The location at the junction of TGV lines connecting Paris, London and Brussels would make Lille the crossroads of Europe. It delineates links to public transportation facilities, layout of public spaces, street layout, parking facilities, and converts the périphérique (ring road) into an underpass. The existing infrastructure is emphatically visible in what Koolhaas calls the "Piranesian space" – an area cut out of the parking garage which reveals the complexity of the infrastructure. The station succeeds in simultaneously offering a view of the motorway, over the train station and subway, and into the garage. By partially opening up the tunnel tube, the TGV is visible from the city. Euralille creates a city within a city. As the Eurostar train service passes through Lille – it puts the city in a position of being within 1.5 hours of London, Brussels, and Paris. A city that was nondescript becomes defined by its existence as an important transit node in the European network. It is not a place for pause; it is a place of transference. The train is an urban artery leading to the re-formation of Lille's existence. Many high-profile buildings are built around the node to create its identity.

- Method: Hyper-Complexity.[16]

16 Barley, Nick. Breathing Cities: The Architecture of Movement. (London: Birkhauser, 2000) 13-17.

2.13 OMA_ Koningin Julianaplein [unbuilt]

The Hague, Netherlands

The site deals with the transition between historic center and modern quarter. The design contains a greenbelt with roads surrounding it, along with an insertion of mixed development in area between station and greenbelt. There is a need for one or two towers because of program requirements and space restrictions.

• Method: extrusion of program to arrive at framed views and pedestrian passages.[17]

Figure 2.11: Koningin Julianaplein

2.14 UN Studio/ Ben van Berkel _ Central Train Station [1996-2006]

Arnhem, Netherlands

This project uses the flowchart as a source of form and includes a “climate controlled” plaza linking railroad, taxi, bus, bike, car, and towers. Intersections are kept at minimum, while the pedestrian area is maximized. The roofed plaza becomes a continuation of urban spaces, and pedestrians define the diagrammatic framework.

• Method: the grand hall as connection node with simple enclosure.[18]

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17 Cortes, J. A. “Delirious and More: The Lessons of the Skyscraper, Strategy vs. Architecture.” (El Croquis. 2006) 36-42.

18 “UN Studio: Arnhem Central, Arnhem, the Netherlands.” GA Document. June 2006: 44-47.

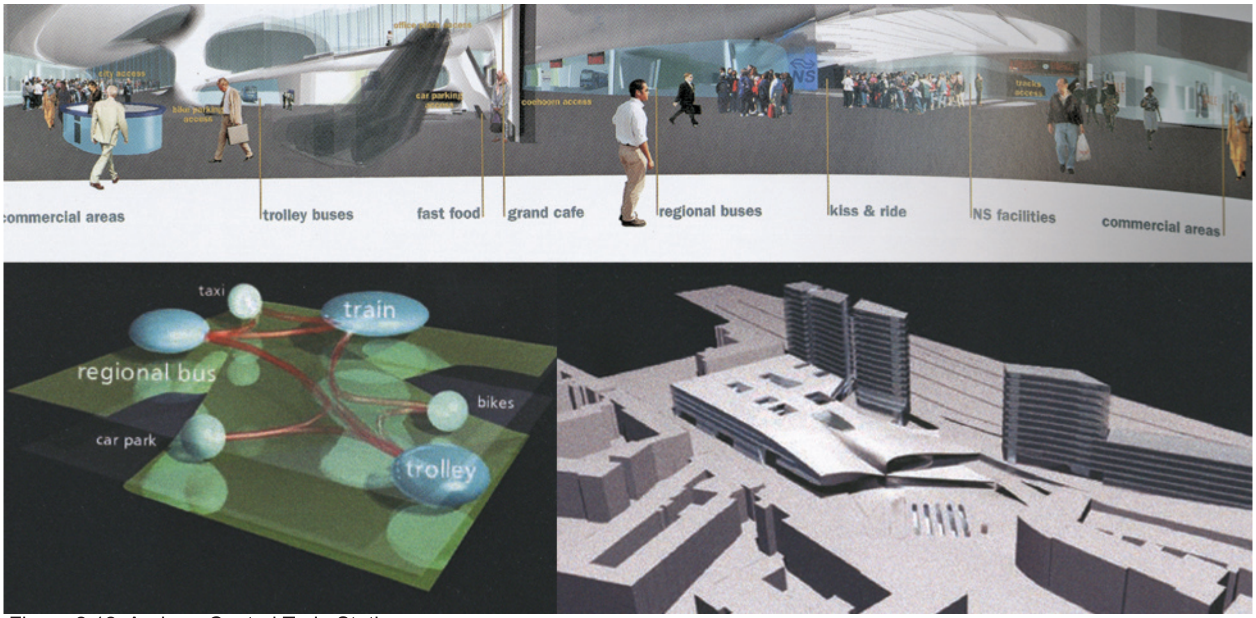

Figure 2.12: Arnhem Central Train Station

2.15 Von Gerkan_ Central Rail Station [2006]

Berlin, Germany

This project intersects transit buildings with retail space and offices. It has an undulating canopy for a column free interior with photovoltaic panels.

- Method: classic central hall [dual] with classic train shed[19]

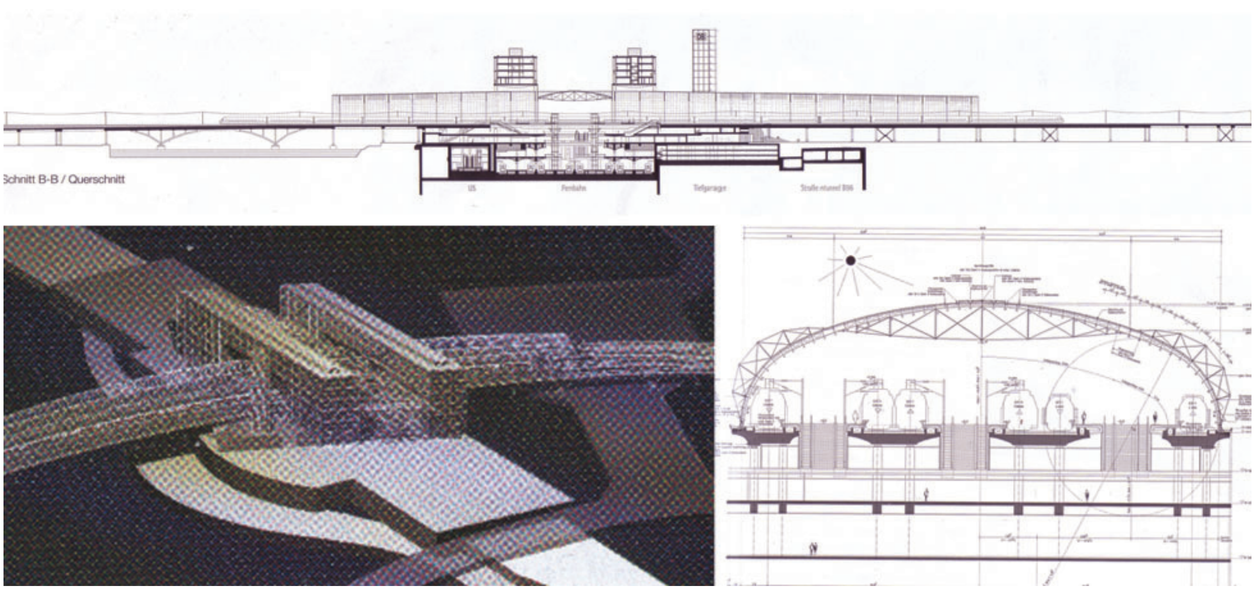

Figure 2.13: Berlin Central Train Station

19 Gerfen, Katie. "Glass Ceiling." Architecture. Feb. 2005: 51-52.

2.16 Zaha Hadid_ High-Speed Train Station[2008]

Naples, Italy

This project lifts its program above the tracks, separating program from train. It is a strip design with a literal path and circulation translation.

- Method: program lift and elongation, strip covering for waiting.[20]

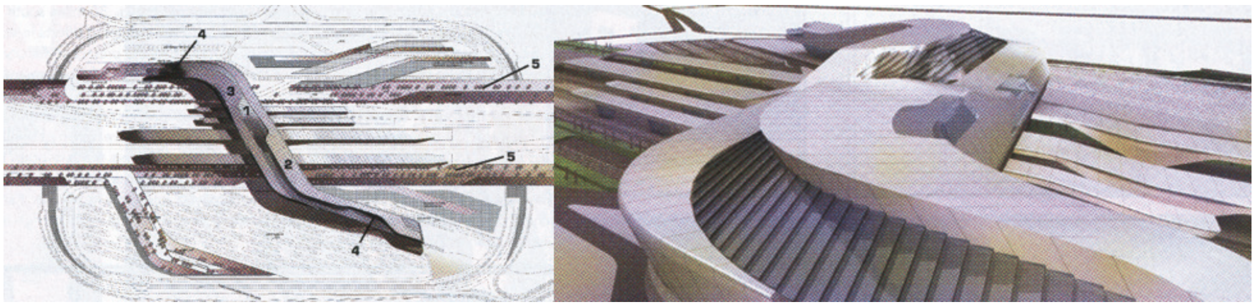

Figure 2.14: Naples High-Speed Train Station

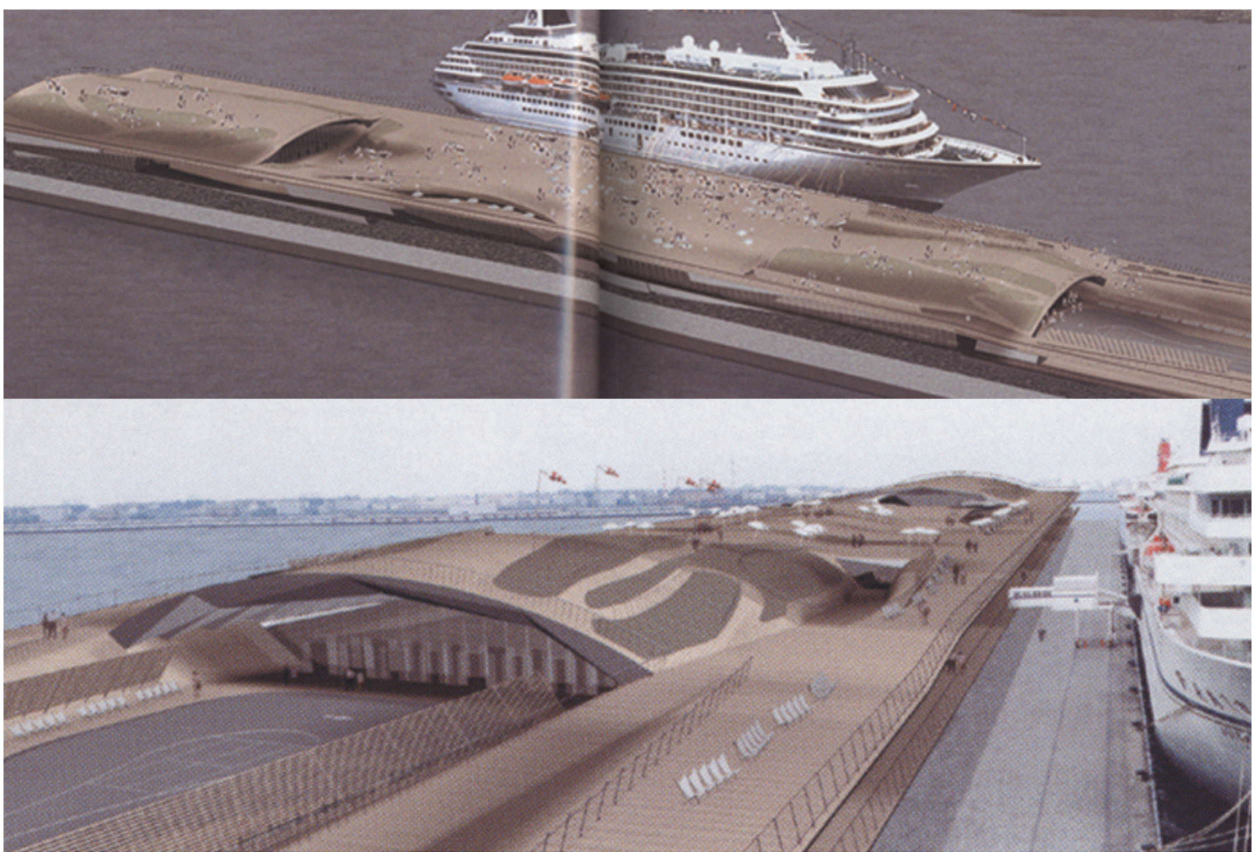
Figure 2.15: Yokohama Terminal

20 Holtzman, Anna. “Zaha Hadid Architects: High-Speed Train Station Napoli-Afragola.” Architecture. May 2004: 41.

2.17 Foreign Office Architects_ Yokohama Terminal [1995]

Yokohama, Japan

FOA makes a place of international cruise docking double as an urban public space – transforming a space for elite cruisers into a space for all people. An analysis of the dynamics of flow leads to specific path placement – creating a network of woven paths. Column and beam construction is questioned and replaced with a system of folding planes – instead of creating form from lines, form evolves from structural planes.

- Method: exploiting a place of stagnation as a network of fluid paths.[21]

21 Barley, Nick. Breathing Cities: The Architecture of Movement. (London: Birkhauser, 2000) 49-51.

CHAPTER 3

TRANSIT MODES AND FACILITIES

3.1 Bus Transit

3.1.1 Bus Transit Features

The service method is a function of stop frequency. **Local service** is most common, stopping every block or two along the route. **Express bus** connects outlying areas with the Central Business District [CBD], stopping less often to keep the service as fast as possible. These buses typically have very limited schedules, as the timing relates to the commuter's schedule – morning and afternoon rush hour. They also run on freeways and major roads to allow faster speeds, sometimes running in the HOV lanes. **Limited stop service** combines the qualities of express and local service bus, so stops can be from one block to several miles apart along the same route.

The services offered by buses vary. **Fixed route** service keeps the same stops for each trip. **Route deviation service** allows for a bit of deviation from the prescribed route – up to three or four blocks from the original stop. It can be used by those who do not qualify for paratransit services and have trouble getting to existing stops. Those who have no other options besides using transit are called "captive riders." **Paratransit** is demand response transit. Those individuals who cannot use fixed route bus service due to a mental or physical disability are called "subscribers," and they call the service to arrange a pick-up time.

Buses operate within varying types of networks. A **radial system** is the most common fixed-route type and arranges itself in a hub-and-spoke pattern, usually with the CBD as the center. A **grid system** operates from the existing city grid along parallel and perpendicular paths. **Trunk routes** operate along major roads or arterials. **Crosstown systems** connect two areas that lie outside of the CBD. **Circulator service** operates in limited areas, often in suburban areas.

Bus stop placement includes three categories: **nearside** [before the intersection], **farside** [after the intersection], and **midblock** [between intersections]. Spacing of the bus stops range from every block or two in high-density areas to miles apart in low-density areas.

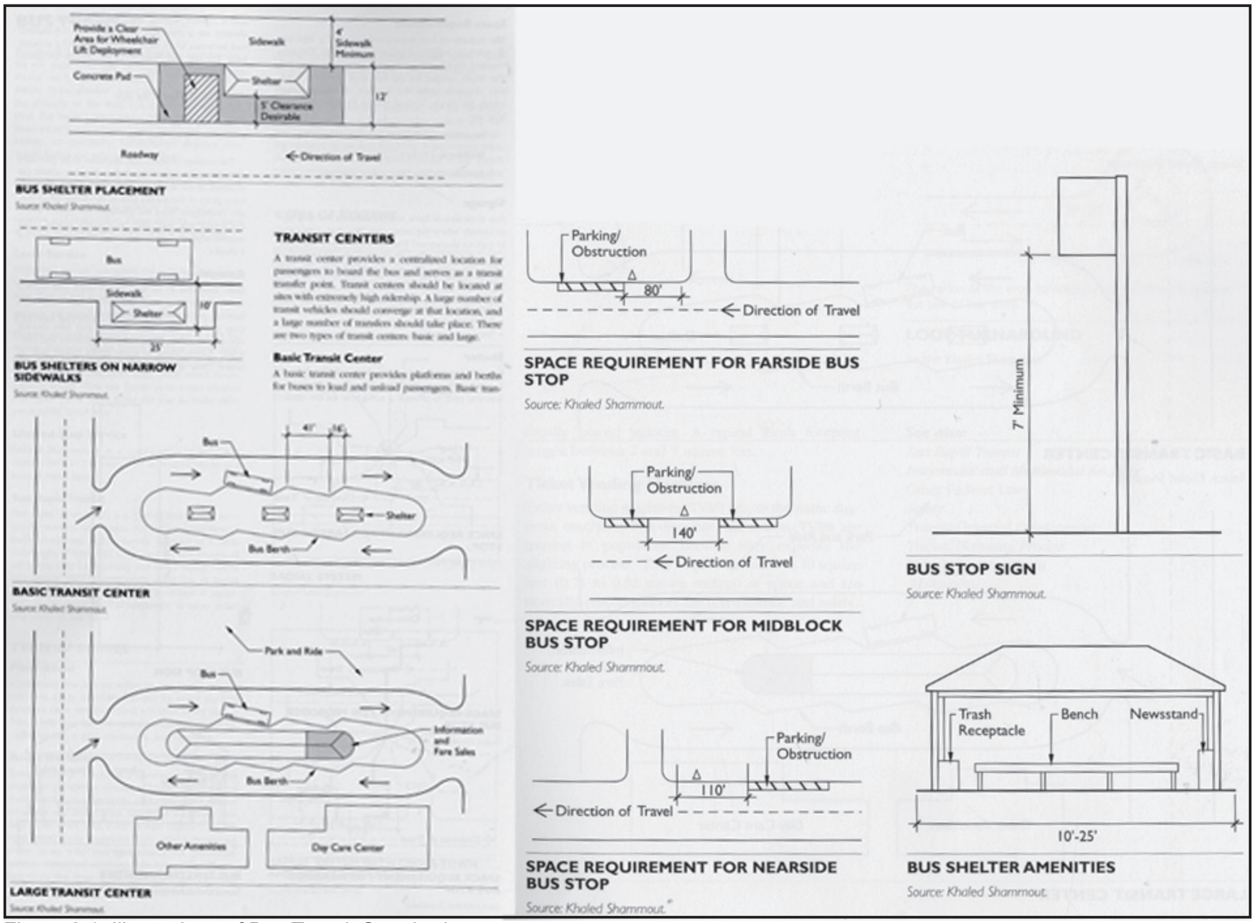

Figure 3.1: Illustrations of Bus Transit Standards

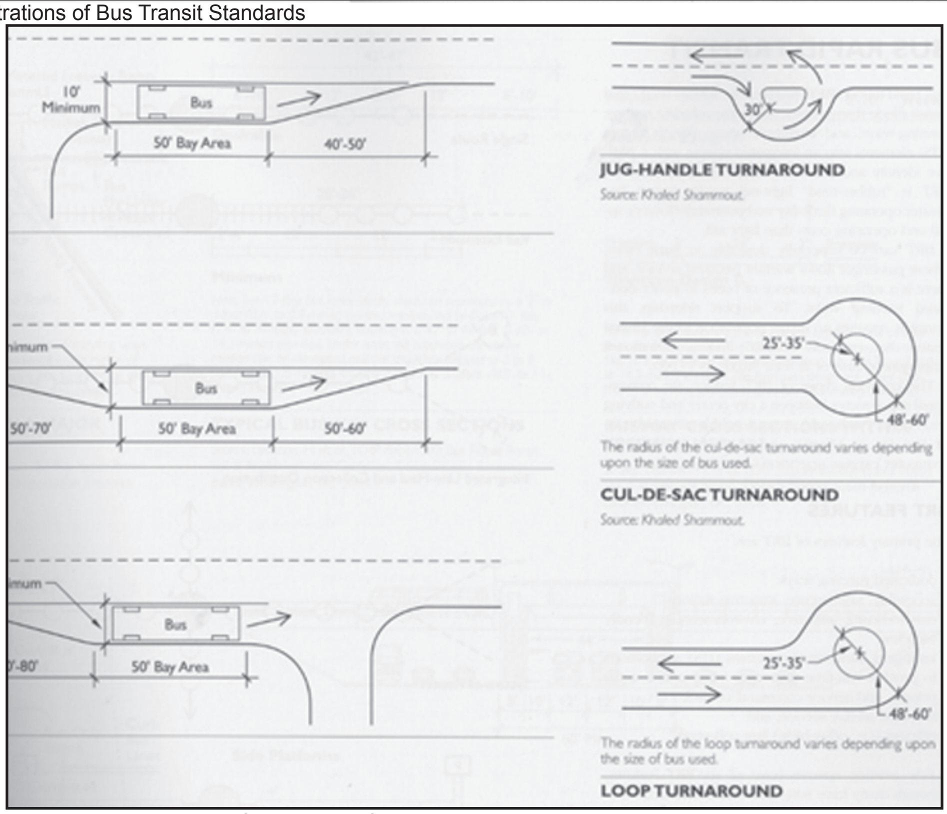

Figure 3.2: Illustrations of Bus Transit Standards

Nearside stops require 110' clearance, midblock stops require 140' clearance, and farside stops require 80' clearance.

Bus stops are minimumally required to have a sign, but they may also include shelter. These are usually placed on a concrete pad and are 6' wide and 10'-25' long. The shelter design depends on weather – cold weather necessitates a stop closed on three or four sides with an entrance opening. The surroundings contribute to the outcome, as do as the number of riders and the amenities at the particular stop. The basic amenities include a seating bench, lighting, trash container, and the bus schedule. The stop may also include a newspaper stand, ticket machine, etc.

3.1.2 Bus Transit Centers

A transit center serves as a transfer point for many transit vehicles. They should be located in areas of very high ridership. A **basic transit center** includes platforms and berths for the loading and unloading of passengers. It may have electronic signs, such as LED screens. The typical size for centers of this type is one to two acres. A **large transit center** has platforms and berths, but it also includes supporting services such as retail or a restaurant. Usually, an indoor waiting area and an information booth are included in the design of the large transit center, and they are on three to five acres.

Buses rely on design to circulate effectively. **Turnouts** are used to increase the safety of transit operations. These recessed stopping areas are along high-speed roads, and they allow for acceleration and deceleration. **Turnarounds** are designed to allow buses to file back into the service route. They may also be placed at the end of mass transit routes to turn vehicles. The typologies include jug-handle, cul-de-sac, and loop. The width should be large enough to allow for a stopped vehicle and a turning one.[22]

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22 Sendich, Emina. Planning and Urban Design Standards. (Hoboken: John Wiley and Sons, 2006) 268-271.

3.2 Bus Rapid Transit [BRT]

3.2.1 Bus Rapid Transit Features

BRT is sometimes called “rubber-tired light rail transit” because of common elements such as speed and stop frequency. The benefits over light rail are lower capital and operating costs as well as more operational flexibility. This service can be very successful in cites with a considerable need for bus service – to the point that dedicated bus ways make sense. This typically requires a population of more than 750,000 along with a downtown employment of 50,000 to 75,000.

Examples of usage patterns include radial routes between a city center and connecting communities [Pittsburgh], express commuter service including park and ride lots [Houston], and rapid rail extension [Miami]. BRT operates limited-stop for the majority of the route – an express function – to achieve the rapidity which is the strength of the transit type.

Features of BRT include dedicated running ways, stations, environmentally-friendly vehicles, intelligent transportation systems [ITS] to integrate signal priority, frequent service with service all day long, and simple fare collection. Traffic signals cycles should be as short as possible along BRT routes – possibly with one bus for each traffic signal. BRT operates within a variety of modes – mixed traffic, curb bus lanes, median busways, freeway lanes, bus-only roads, and bus tunnels. Bus tunnels can be a way to run this type of transit through the city center without disturbing surrounding traffic.

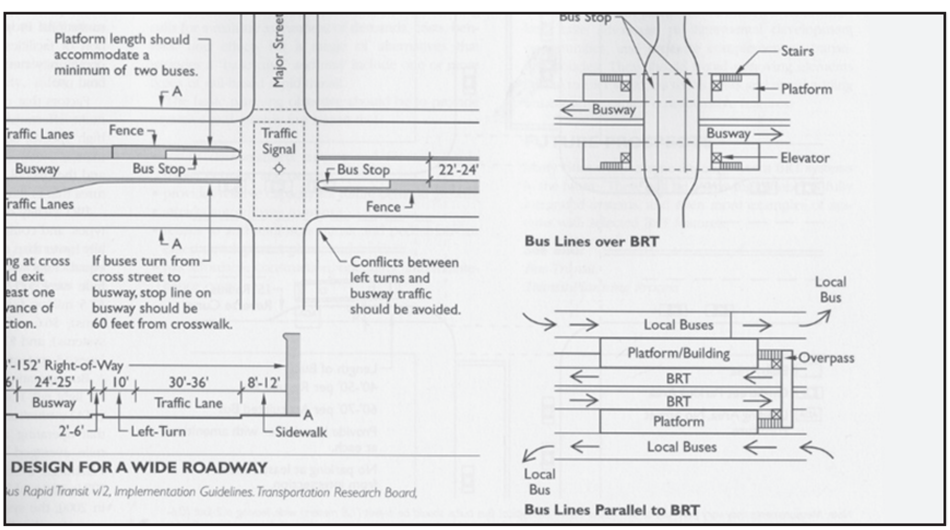

Figure 3.3: Illustrations of Bus Rapid Transit Standards

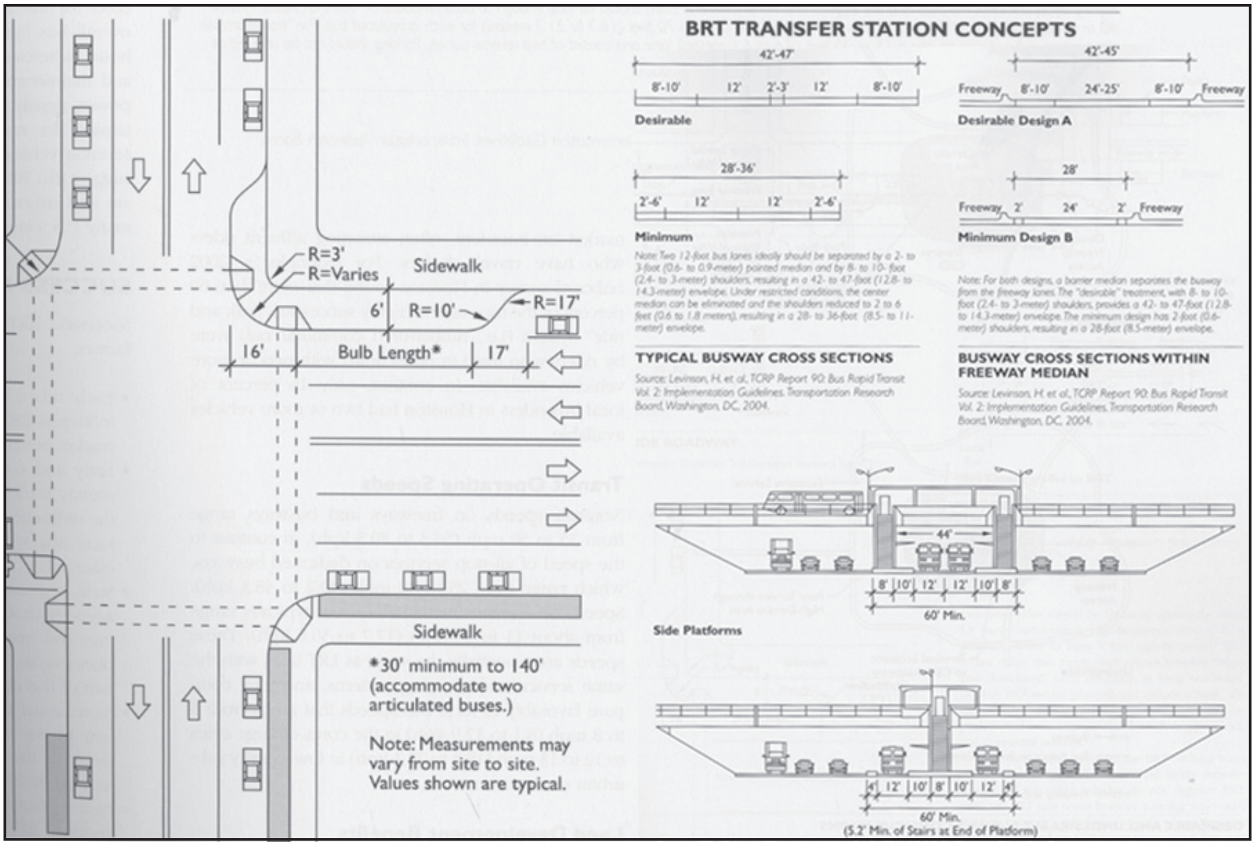

Figure 3.4: Illustrations of Bus Rapid Transit Standards

3.2.2 BRT Stations

BRT stations may be very similar to light rail stations. The goal should be to integrate the station with its surroundings – developed in a cooperative manner with traffic, other modes of transit, pedestrians, and site placement. Some typical goals of BRT stations include keeping the stations as far apart as possible while meeting requirements and creating farside stops when the running way meets the street at grade, possibly using "bus bulbs" which are 6' attenuations of the sidewalk at the same length of the bus. The station design should correlate to the bus type – particularly regarding platform height. The supporting facilities should be designed to accommodate the expected current amount of ridership as well as future needs. The BRT should easily transfer to other modes. The careful placement and location of these stations have proven to be a generation factor for development. Key elements to successful developments include frequent service, high speeds, and integration into surrounding urbanity.

Speeds are roughly the same as light rail. Along freeways and busways they range from 24-20 mph [all-stop] to 35-50 mph [nonstop]. Arterial street BRT runs at 11-19 mph. Also, the demographic nature of the BRT rider is much like the light rail user – often attracting affluent people with many transit options. This type of transit converts car drivers into transit users.

Success factors that should be taken into consideration include the unique situation of the area correlating directly to the BRT patterns and service and the importance of local, state, and regional commissions taking part in the development – this type of transit requires integration between transit service planners and traffic engineers. Development may occur incrementally in terms of both geography and system technology – designing the plan in phases can incorporate unknowns to reduce risk. Parking can be extremely important – and it should enhance rather than compete with BRT. Markets and right-of-way availability must be matched to ensure that the routes run as planned. BRT should operate in markets that have proven they have the need – bus routes can not support themselves.[23]

3.3 Rail Transit

3.3.1 Rail Transit Features

Commuter rail, heavy rail, and light rail [streetcars, trams] are defined based on location, speed, passenger volume, and cost. The location relates to right-of-way [ROW] – exclusive, semiexclusive, or shared. The speed is determined by the ROW – exclusive ROW enables higher speeds while shared leads to running with the speed of existing traffic.

Commuter rail operates between a central city and an outlying city, town, or suburb. This high-volume rail is also called suburban rail or regional rail. **Heavy rail transit [HRT]** runs on exclusive ROW apart from other vehicles and serves a high-volume. It is high-speed and utilizes high-platform loading. **Light rail transit [LRT]** can operate in a variety of ways – on ground level, aerial structures, subways, or streets. It can also operate within varying degrees of ROW- from shared to exclusive and serves medium to high volumes. **Streetcars/ trams** are made to fit the scale along neighborhood streets. Running in mixed traffic, these vehicles use curbside parking and loading. They exist in medium to high volume traffic. The vehicles are shorter and narrower than other rail cars, and the systems may serve as distributors for larger regional webs.

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23 Sendich, Emina. Planning and Urban Design Standards. (Hoboken: John Wiley and Sons, 2006) 272-277.

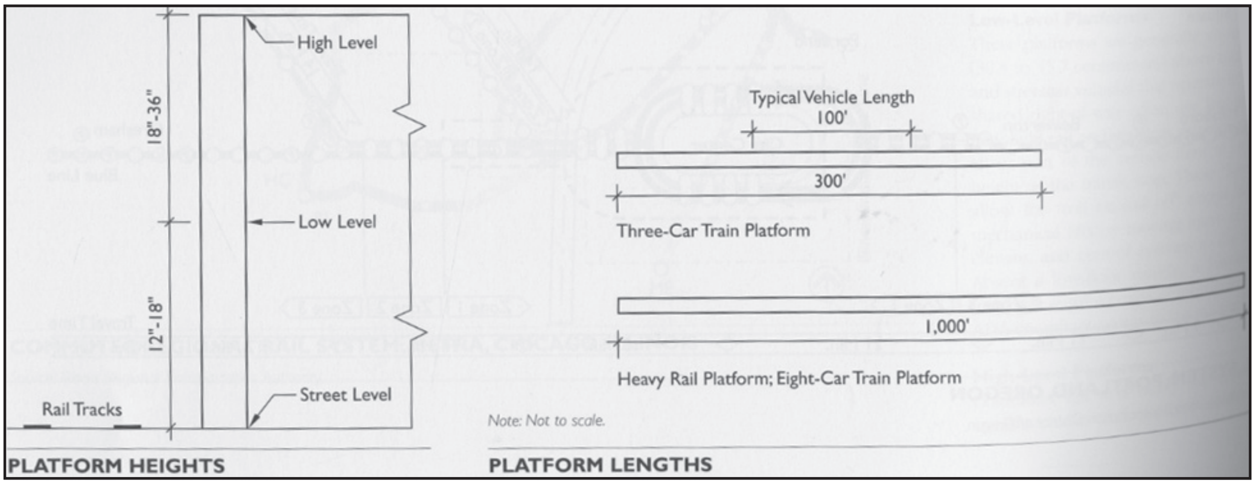

Figure 3.5: Illustrations of Rail Transit Standards

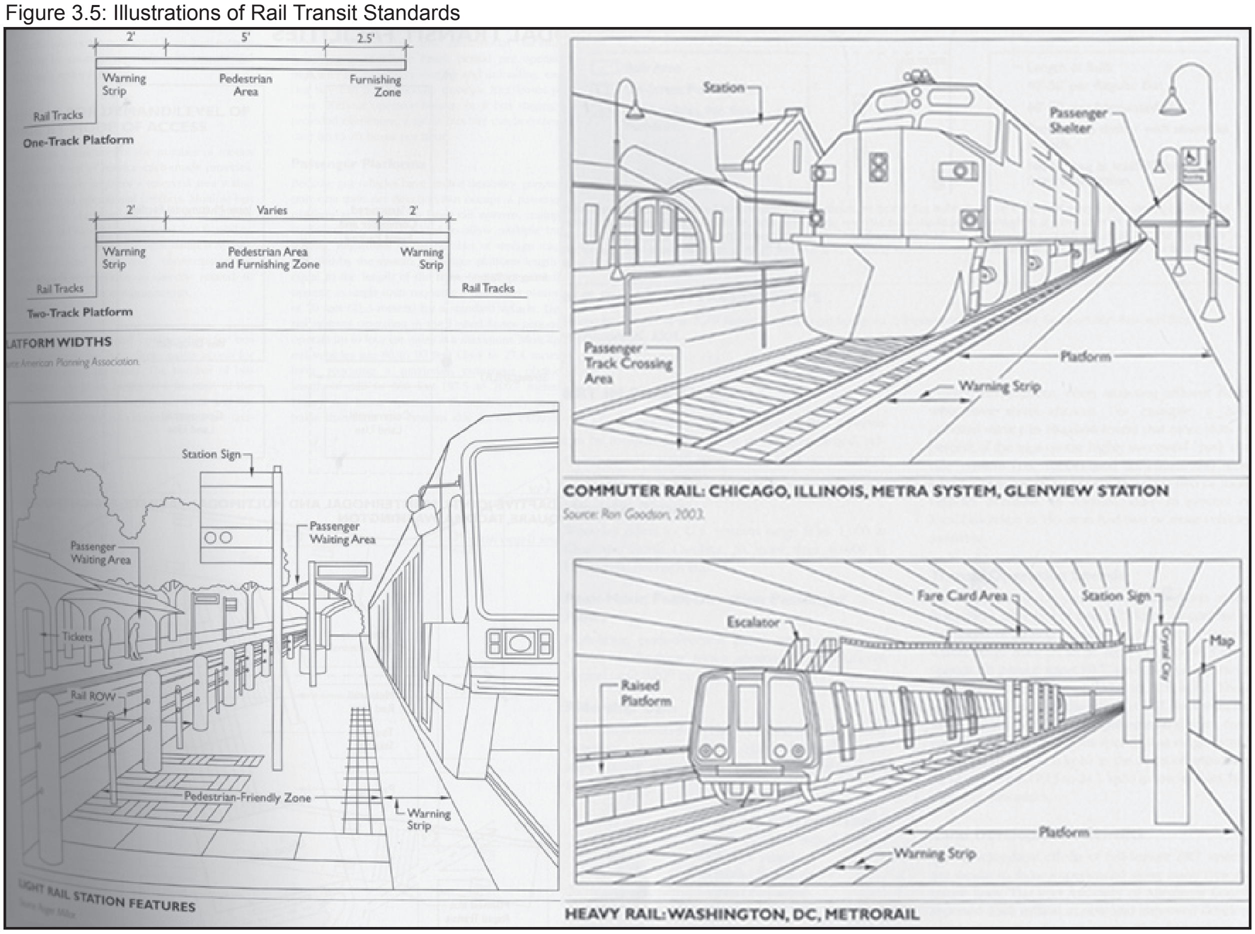

Figure 3.6: Illustrations of Rail Transit Standards

The service patterns of rail vary by type. **Local service** stipulates that the rail car stop at each station within a route. For streetcars and trams, this type of service makes them comparable to bus service. **Express service** travels at high speeds without stopping – they may run on separate tracks from the local service rail. **Limited stop service** is between local and express – it keeps the route faster by stopping at only the highest-volume stations.

3.3.2 Rail Transit Stations and Stops

The stations should be located near to the greatest number of expected users along the path. The surrounding area to the station is extremely important – the walkability of the surrounding area greatly affects the likelihood that people will walk to the station. The sidewalks and bike paths will lead the passengers to the station, and the parking lots are just as important as access points. The **pedestrian** condition between parking lots, bus stops, and unloading areas [kiss and ride] must be designed carefully. The **parking** should be seamless with the surrounding streets. Some tactics for making the lots more connected to the station are to cluster smaller lots rather than create one large lot or screening the parking from the surrounding area with strategically placed buildings. Bicycle storage should also be located on site – short term racks as well as long-term lockers.

Platforms are sized according to the train length. The width of the platform relates to the number of anticipated users. The track must be at least 9.5' wide to accommodate one train – including a 2' tactile warning strip, 5' pedestrian area, and 2.5' furnishing zone for benches, etc. Street-level platforms are mainly used by streetcars and trams – any transit that stops on the street and not in a station. Low-level platforms are usually 12-18" above the track, and they are usually used by LRT and streetcars. High-level platforms, 18-36" above the track, are used by HRT and commuter rail with exclusive ROW. The track level includes the functions of propulsion, climate, and control as people enter along the platform above.

The **canopy system** is often the most prominent feature of the transit stop – often receiving the most design attention. Underground stations are extremely complex dealing with vehicle type, climate control, loading, and passenger safety. Canopy systems for above-ground stations must deal effectively with rain, snow, and light.[24]

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24 Sendich, Emina. Planning and Urban Design Standards. (Hoboken: John Wiley and Sons, 2006) 278-283.

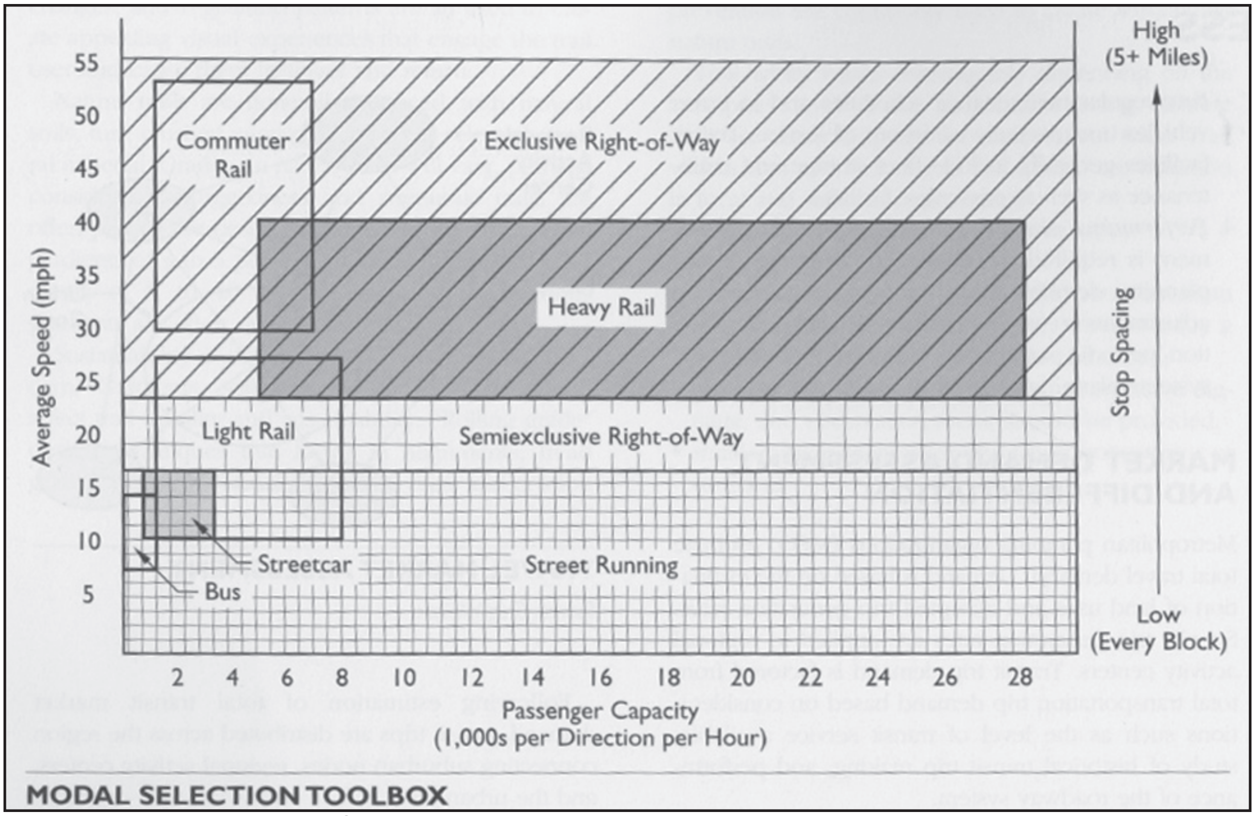

Figure 3.7: Transit Planning Modal Selection Toolbox

3.4 Transit Planning Process

Each mode of transit is defined by different parameters including average speed, carrying capacity, stop spacing, and right-of way. Relationships between each of these factors exist. As stop spacing and ROW increases, speed increases. Commuter rail travels at high speeds, so they can not operate with close stop placement. Three trip configurations exist: local circulation within a particular node, connections between nodes, and links across multiple nodes. **Local circulation** usually includes short trips with the lowest travel speeds. This type of service is inexpensive, flexible, and relatively frequent. The modes for this type of service include local fixed bus route and streetcar. **Intermodal service** includes modes such as express/ regional bus, BRT, and streetcar that bring transit to a larger and faster moving scale than the local bus routes – with fewer stops. **Regional service** competes directly with the car, so speed is of paramount importance. Few stops and exclusive ROW contribute to needed regional speed in BRT, LRT, HRT, and commuter rail. **Priority treatments** can help the process of efficiency. Some improvements include signal priority, queue jump lanes, and high-occupancy vehicle [HOV] lanes. **Fare collection** is affected by transit type. High-volume transit generally has off-vehicle ticketing to decrease boarding time. Low-volume systems may use on-vehicle collection, since frequent boarding occurs.[25]

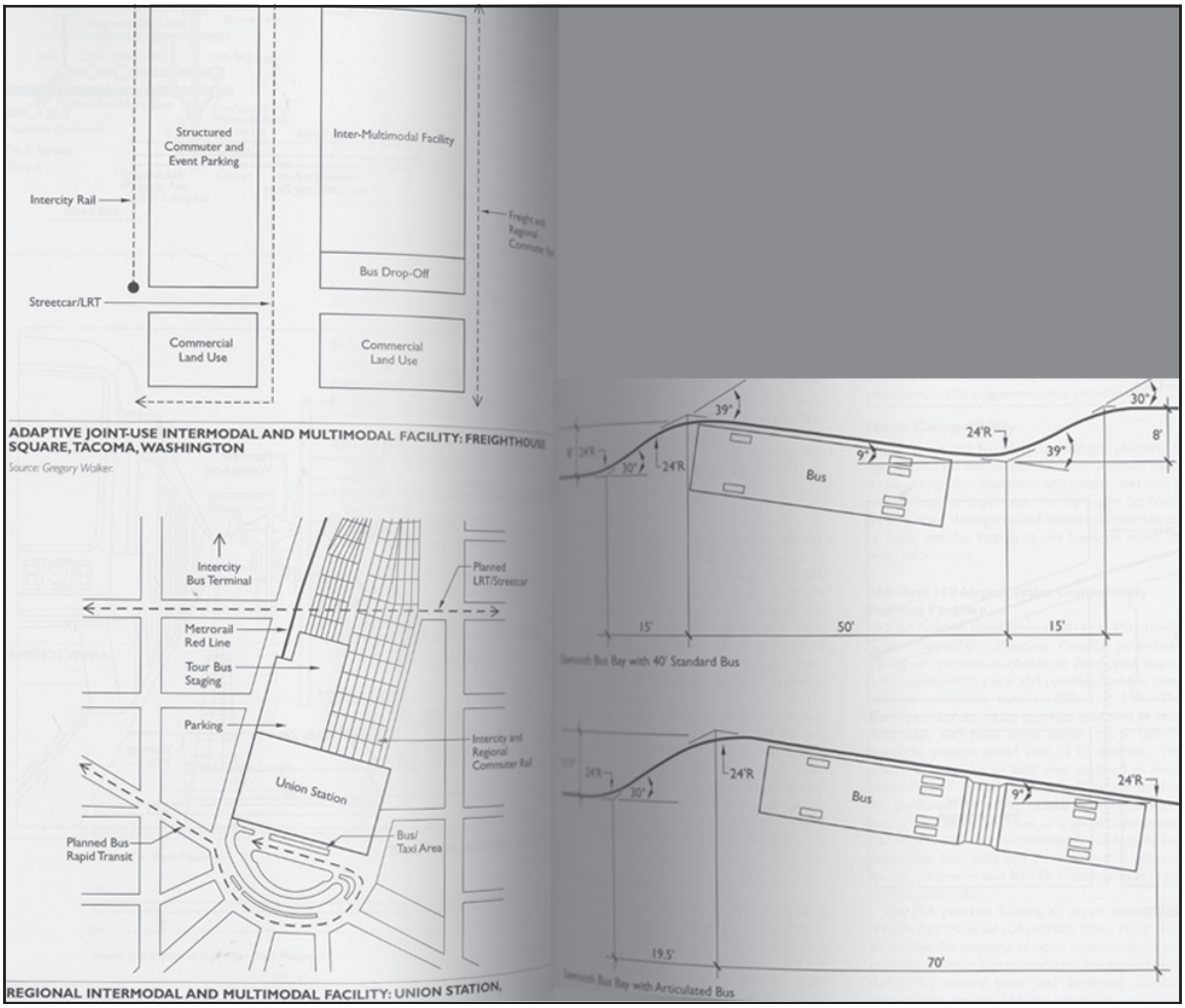

Figure 3.8: Illustrations of Intermodal Facilities

3.5 Intermodal and Multimodal Transit Facilities

These facilities are places of transition between modes of transit. While serving each mode independently and allowing it to function efficiently, the systems must work together to balance the transportation system so all transportation needs will be met. Public transit within a city includes a spectrum of options – from local bus routes to heavy rail transit. These modes

25 Sendich, Emina. Planning and Urban Design Standards. (Hoboken: John Wiley and Sons, 2006) 265-267.

must connect to intercity rail [Amtrak] and bus [Greyhound] lines.

The **community** in which the facility is located is the basis for design. High-density areas have multimodal facilities that connect main trunk service to local service. These are often developed for mixed-usage. One example is Union Station in Washington D.C., which connects Metrorail, commuter trains, Amtrak, intercity bus, local bus, tour bus, and taxi, while also functioning as a entertainment and shopping center with over 100 establishments. In less-dense areas, such as suburbs, the planning of surrounding developments has different deciding factors. The traffic and noise that is generated at these sites may lead to more commercial than residential development, for example. The scale of the facility directly relates to the number of modes served and what each mode requires. Buses can share common areas due to their flexibility, but the same is not true for rail. The **sawtooth bus bay** is the best method of multiple bus placement. The number of bays is a function of the number of buses in a facility during one hour as well as the length of time each bus pauses. At multi-modal facilities, operator rest is usually scheduled. If each bus pauses for 15 minutes, then four buses will use the bay per hour. Only one train can occupy a platform, and **passenger platform** length relates to the length of the train. Generally, streetcars are 70' long, light rail operates four cars that are 80'-90' to total a needed 320'-360'. Heavy rail trains are much longer due to exclusive ROW. **Commuter parking** is a consideration especially at suburban multimodal transit facilities. To plan accordingly, the expected usage must be calculated along with carpool figures. The **passenger drop-off** area, or the "kiss-and-ride," has a few commuter considerations. The drop off time in the morning is usually efficient, but the evening pick-up is not as people park and wait for their passenger to arrive. Queuing and traffic flow are main considerations in planning "kiss-and-ride" facilities. Other elements including pedestrian movement and waiting, bicycle storage, and taxis must be integrated as well. Most often, transit facilities provide for two to three modes at a minimum. The suburban park-and-ride becomes the central access point for these facilities, and this high-frequency service of the multi-modal facility is more effective in low-density areas.[26]

26 Sendich, Emina. Planning and Urban Design Standards. (Hoboken: John Wiley and Sons, 2006) 284-286.

CHAPTER 4

ATLANTA TRANSIT NETWORK

4.1 Atlanta Regional Commission [ARC]

Since 1947, Atlanta has had a multi-county, publicly supported planning agency – in fact, the first in the United States. Originally called the Metropolitan Planning Commission [MPC], it served Fulton and Dekalb counties and the City of Atlanta. ARC now serves 17 counties and 63 municipalities.

"Mission: The Atlanta Regional Commission (ARC) serves as a catalyst for regional progress by focusing leadership, attention and planning resources on key regional issues."

4.1.1 The Regional Transportation Plan [RTP]

The main product ARC has produced regarding transportation in Atlanta is the Regional Transportation Plan [RTP]. This long range plan involves public transit services, roadways and highways, bridges, bicycle paths, sidewalks, and emission reduction strategies. Areas such as Atlanta that do not meet federal air quality standards are required to design the RTP for a minimum of 20 years as well as updating the plan every four years. The ARC is the Metropolitan Planning Organization [MPO] for the Atlanta region, and serves the City of Atlanta and 17 surrounding counties – Barrow, Cherokee, Clayton, Cobb, Coweta, Dekalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Spalding, Rockdale, and Walton.

The RTP was developed by first developing a clear goal set. Then, short and long-term transportation needs were assessed. The transportation polices were organized into scenarios that had potential to meet established needs. These scenarios were tested and evaluated against the goals of the RTP. This process continued through many projected scenarios. Financial forecasts based on the latest data worked their way into the process. Since Atlanta is in an air quality non-attainment region, the RTP revolves around attainment to the National Ambient Air Quality Standards.[27]

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27 "Mobility 2030: Regional Transportation Plan" CD-ROM. Atlanta Regional Commission: 2006.

4.1.2 Mobility 2030

Mobility 2030, the current RTP, unites current transportation demands in Atlanta and surrounding regions with the transportation system to orchestrate a process of integration between the existing transportation and its needed level of improvement. The plan meets both federal transportation planning requirements and federal air quality requirements. Recommended projects correlate to projected funding for a realistic outcome concerning construction, operation, and maintenance.

“The four goals for Mobility 2030 are:

1. Improve accessibility and mobility options for all people and goods.
2. Maintain and improve system performance and preservation.
3. Protect and improve the region’s environment and quality of life.
4. Increase the safety and security of the transportation system.”

The current trends in Atlanta’s growth dictate the way the regional development plan works. Atlanta’s main growth factor is the expanding economy which attracts young workers at peak childbearing age. Also, the segment of the population aged 60 years and older is expected to more than triple by 2030.

Mobility 2030 uses a systems approach for its planning – systems include interstates and cross-regional arterials, HOV lanes, regional transit, smart corridors, and bicycle and pedestrian systems. The interstate and cross-regional arterial system has the greatest need for mobility since it deals with congestion. The HOV lane system is the foundation upon which regional buses and BRT function. Plans are particularly pointed at fast-track construction of HOV lanes along I-75 North and along I-85. Regional transit is forecasted to develop into multiple modes – integrating fixed guideway bus rapid transit, heavy rail, express bus, commuter rail, and improved bus operations. The Smart Corridors system utilizes performance-enhancing information technology to control traffic – such as timed traffic signals. As the Atlanta region approaches a more walkable design, the systems for bikes and pedestrians reflect this.

4.1.3 Transportation Improvement Plan [TIP]

The TIP is the short-range plan that correlates to the long-range plan of the RTP, and the current TIP involves the years 2006-2011. It simplifies the RTP by including the highest priority transportation projects within the long-term objectives of the RTP.

The TIP is usually updated annually, and it contains hundreds of projects. Some of the most important include: bus rapid transit along I-75 N and I-285 N, commuter rail service from Lovejoy to Atlanta, HOV lanes along I-75 N, I-85 N, I-20 W, I-20 E, and SR-316, selected sections of the Beltline corridor, commitment to the Livable Centers initiative dealing with land use, expansion of GRTA regional bus system including park and ride lots, traffic signal upgrades, and widening and upgrading of congested roadways in suburban areas.

Implementation of the TIP involves input from various organizations. After adoption by the ARC, the plan must be approved by the Georgia Regional Transportation Authority [GRTA] which is backed by the Governor of Georgia. Following this, the Georgia Department of Transportation [GDOT] includes TIP plans in its statewide program. The final step is to receive support from the federal government based on requirements for air quality and fiscal conditions.[28]

4.2 Georgia Department of Transportation [GDOT]

In 1916, the State Highway Department was created, and the GDOT was created by Governor Jimmy Carter in 1972. Of its missions and duties, GDOT states:

"The Georgia Department of Transportation plans, constructs, maintains, and improves the state's roads and bridges; provides planning and financial support for other modes of transportation such as mass transit and airports; provides airport and air safety planning; and provides air travel to state departments. The Department also provides administrative support to the State Tollway Authority and the Georgia Rail Passenger Authority. The Georgia Department of Transportation provides a safe, seamless and sustainable transportation system that supports Georgia's economy and is sensitive to its citizens and environment."

4.2.1 Fast Forward Congestion Relief Program

This program began in 2004 under the authorization of Governor Sonny Perdue, and it is designed to accelerate existing transportation projects so that Atlanta's situation is improved as quickly as possible. The plan is designed to put into practice in six years what

28 www.atlantaregional.com, Atlanta Regional Commission. Nov. 2, 2006.

would have taken 18 years to complete. The accelerated plans are chosen from the Statewide Transportation Improvement Program [STIP] and the Construction Work Program [CWP] based on qualifiers including both short and long term congestion relief. Short term congestion relief includes Intelligent Transportation Systems, Highway Emergency Response Operators (HERO) Expansion, Ramp Metering Expansion, and Signal Timing and Synchronization Upgrades. Long term congestion relief includes High Occupancy Vehicle (HOV) Lane Expansion and New Transit Corridors Implementation.

4.2.2. HOV System Implementation Plan

The HOV lane signifies the integration of a more efficient means of public movement within a system designed for individual transportation by car. During the mid-1990's, Atlanta began to integrate HOV lanes into existing interstates. These included I-20 East, I-75, I-85, and I-285. By 2001 Atlanta had over 100-lane miles of HOV lanes. Dedicated off ramps exist for I-75 and I-85 – allowing direct access to and from the HOV lanes. The existence of these lanes coincides with the development of express buses in Gwinnett and Cobb Counties. State funding has been devoted to include HOV lanes in every interstate in the region – especially GA-400 and GA-316. These would enable the express bus network to function more successfully. The lanes help to reduce air pollution, lessen traffic congestion, and save time for those carpooling. The HOV plan is a significant part of the RTP, which includes HOV lanes along key arteries. The plan includes 262 new miles of HOV lanes and 55 ramp improvements or additions.

Most of GDOT's projects involve road and highway improvements which do not fall into the realm of this analysis of public modes of transit. The important link is between the planning of roads and highways and the development of HOV lanes which benefit express bus and bus rapid transit. The plans for these modes must be integrated into the plans for interstates - it is for this reason GDOT and GRTA link certain projects for a comprehensive outcome.[29]

29 www.dot.state.ga.us, Georgia Department of Transportation. Nov. 30, 2006.

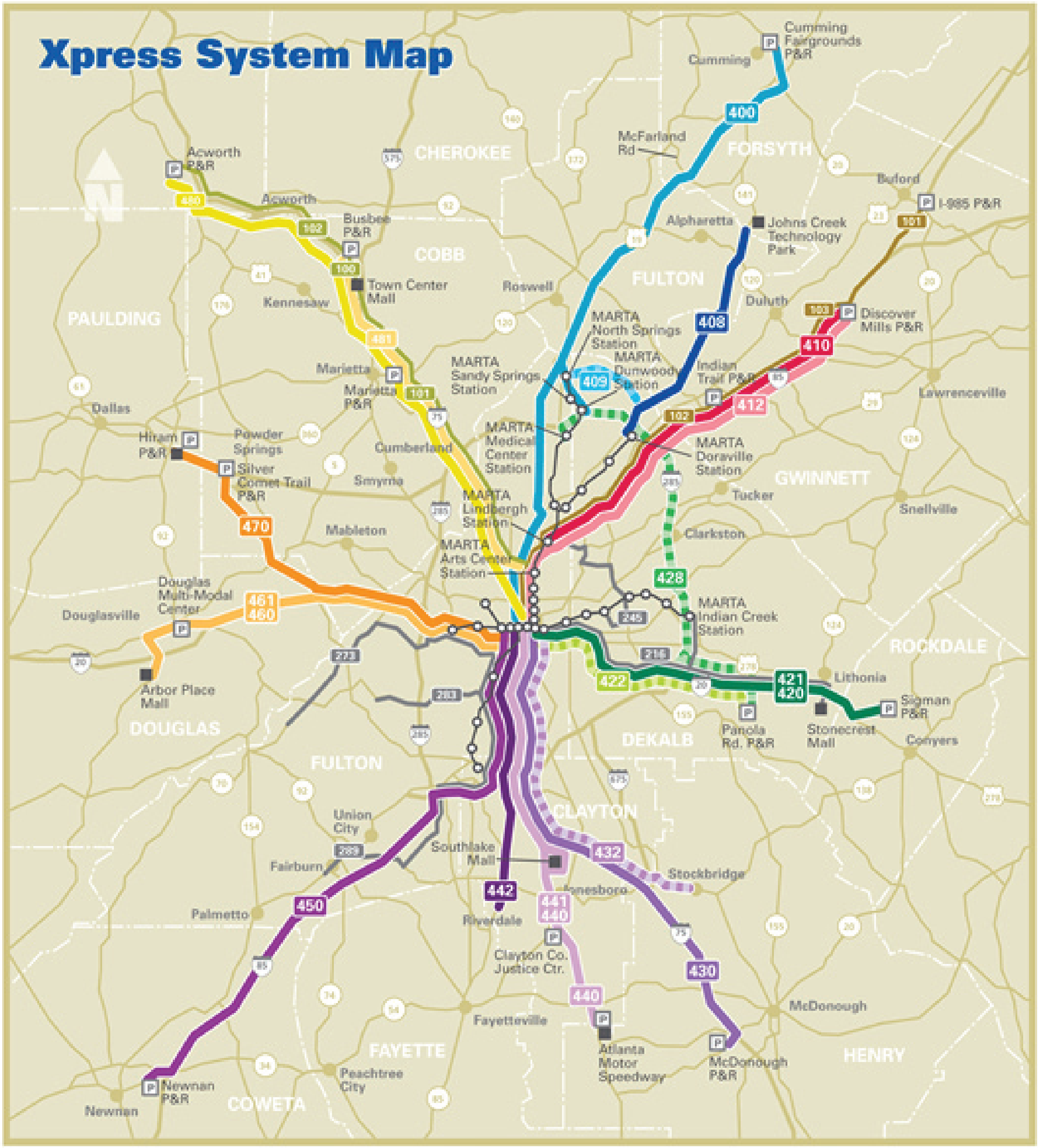

Figure 4.1: GRTA's Xpress Bus System Map

4.3 Georgia Regional Transportation Authority [GRTA]

"It is the mission of the Georgia Regional Transportation Authority (GRTA) to provide the citizens of Georgia with transportation choices, improved air quality, and better land use in order to enhance their quality of life and promote growth that can be sustained by future generations."

Metropolitan Atlanta is currently designated as a non-attainment area for air quality. The 13-county non-attainment area encompasses the following counties: Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties. The 2025 Regional Transportation Plan (RTP), adopted in 2000, established the region's conformity to Georgia's State Implementation Plan, thereby meeting the requirements of the Clean Air Act Amendments of 1990 under the current one-hour standard for ozone attainment. However the U.S. EPA has proposed establishing an eight-hour standard that would likely increase the size of the non-attainment area up to 21 counties, and set new emission targets and dates.

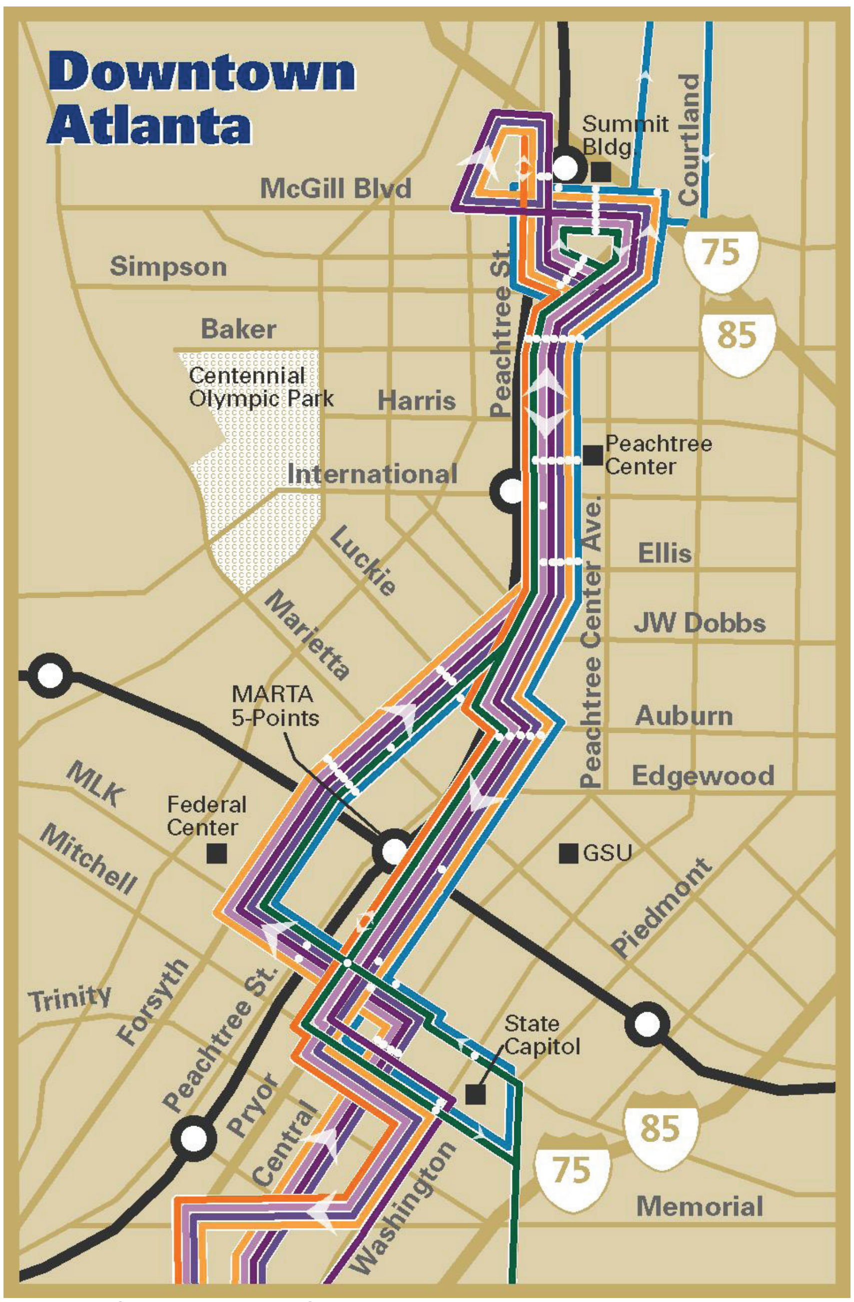

Figure 4.2: GRTA's Xpress Bus System Map - Downtown/ Midtown Loop

The Regional Transit Action Plan (RTAP) is a major study that will identify transit improvements that will help to achieve GRTA's mission. The RTAP includes both short-range and long-range transit action plans. The regional express bus program is a major component of the short-range plan.

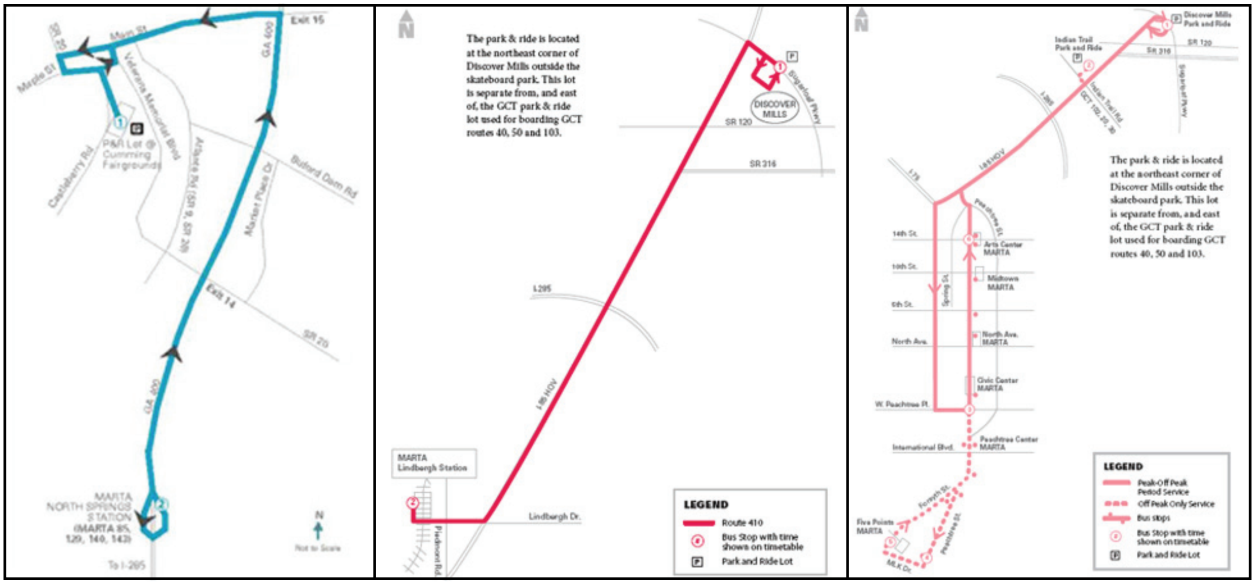

Figure 4.3: GRTA's Xpress Buses 400, 410, 412

4.3.1 Xpress - Regional Bus

GRTA Xpress bus service serves to provide quick point-to-point connections in various areas of the region, and it is designed after the successful methods of Cobb County Transit, Gwinnett County Transit, and MARTA. The commute to Atlanta is one consideration; however, the reverse commute from the city to jobs in outlying counties is the second consideration. The third requirement is the suburb to suburb commute.

GRTA operates an express bus service in conjunction with the 11 counties in the Atlanta area. The service began in 2004 and was quickly embraced by all counties. GRTA currently operates 15 routes and plans to add more routes over the next several years – as many as 27 routes in total by the end of the decade. The buses operate Monday through Friday 5:30 a.m – 9:30 p.m. The service plan of the express regional buses involves connection to existing and planned bus routes. Key transfer centers such as Hartsfield Airport, Cumberland Transit Center, and Perimeter Center can provide connection between many modes of transit – including

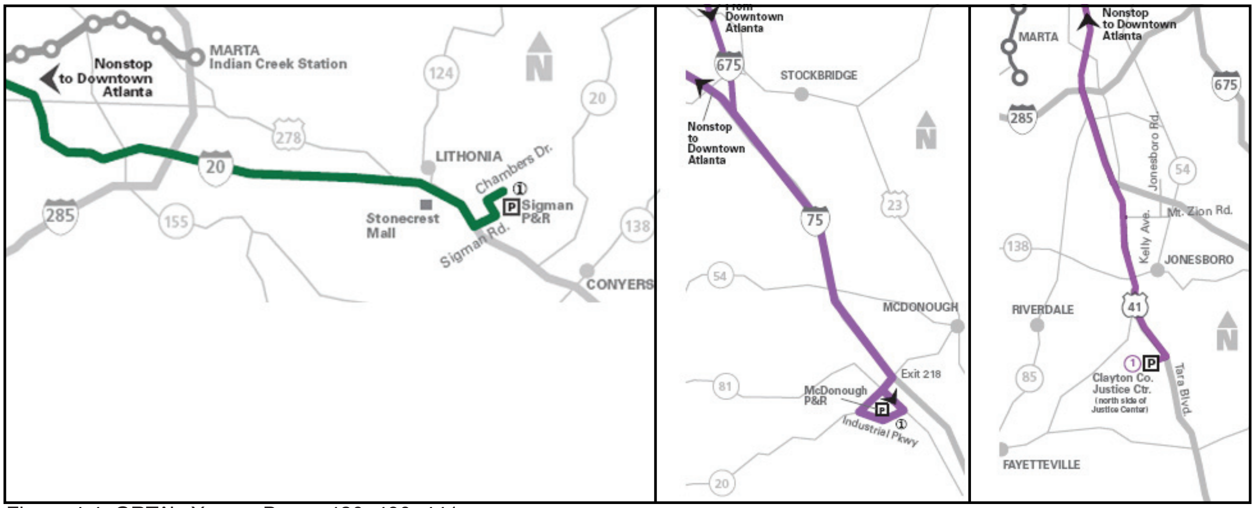

Figure 4.4: GRTA's Xpress Buses 420, 430, 441

express bus, local routes, and MARTA rail.

Express bus routes transport people from park and ride lots to concentrated areas of attraction in order to reduce the need for transfer. It is most desirable to connect to MARTA stations if transfer is necessary - experience has shown that people generally prefer to connect with more reliable, frequent modes of transport such as rapid rail rather than connect to another bus. The main concentration of employment in Atlanta is in the Downtown area, followed by the Midtown area. These superdistricts are joined by other inter-county concentrations including Cobb & Gwinnett districts and Forsyth County to Perimeter Center, all Southside counties to Hartsfield Airport, and Cherokee County to Town Center and Cumberland.

<u>4.3.1.1 Route 400 – Cumming and North Springs to Downtown</u>

This route meets MARTA rail at North Springs, North Avenue, Civic Center, Peachtree Center, and Five Points. It is mainly a commute route with one reverse commute trip, and it runs along GA-400. Its park and ride lot moves to a permanent location in fall 2007.

<u>4.3.1.2 Route 408 – Johns Creek to Doraville</u>

This route meets MARTA at Doraville. It is both a commute and reverse commute route, and it runs along GA-141.

<u>4.3.1.3 Route 410 – Discover Mills to MARTA Lindbergh</u>

This route meets Marta at Lindbergh Center. It is a commute route only, and it runs along I-85 to Lindbergh Drive.

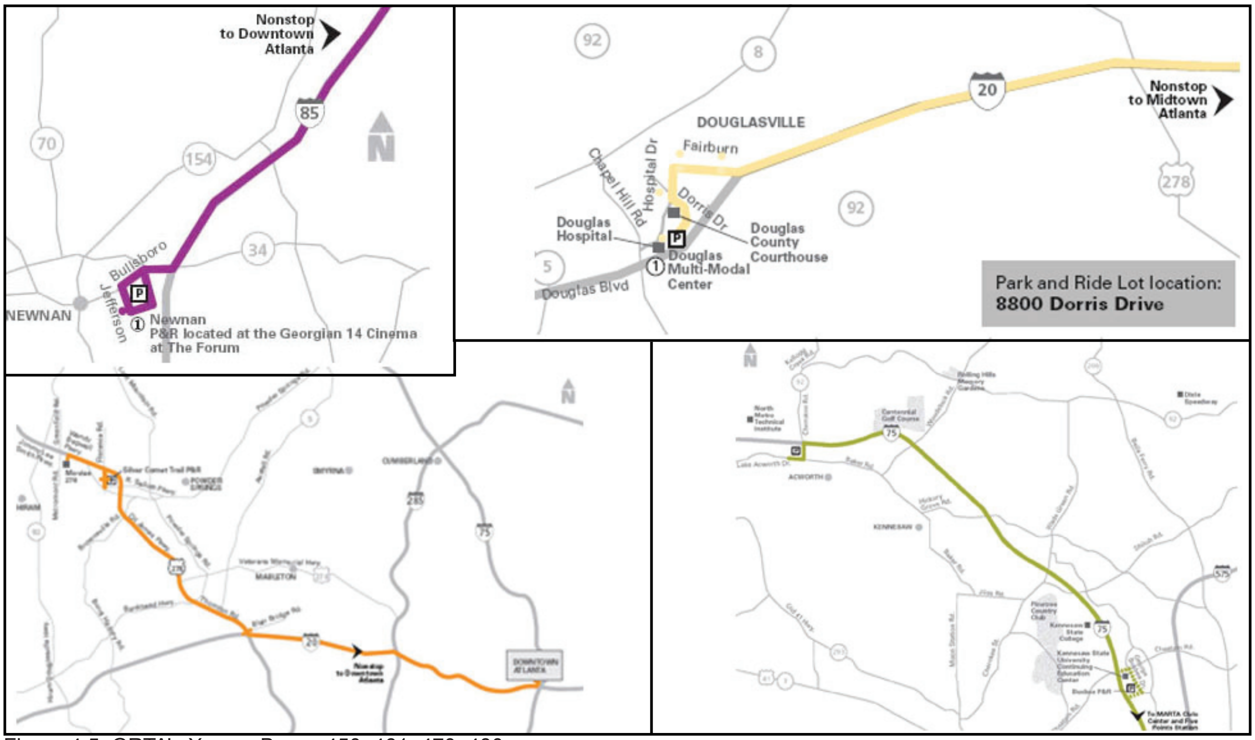

Figure 4.5: GRTA's Xpress Buses 450, 461, 470, 480

<u>4.3.1.4 Route 412 – Discover Mills to Midtown/ Downtown</u>

This route meets MARTA at Arts Center, Midtown, North, Civic Center, Peachtree Center, and Five Points. It is both a commute and reverse commute route, and it runs along I -85 to Spring Street.

<u>4.3.1.5 Route 420 – Conyers to Downtown Atlanta</u>

This route meets MARTA at Civic Center, Peachtree Center, and Five Points. It is both a commute and reverse commute route, and it runs along I-20.

<u>4.3.1.6 Route 421 – Conyers to Midtown Atlanta</u>

This route meets MARTA at Arts Center, Midtown, North, and Civic Center. It is mainly a commute route with two reverse commute trips, and it runs along I-20.

<u>4.3.1.7 Route 430 – McDonough to Downtown</u>

This route hits MARTA at Garnett, Five Points, Peachtree Center, and Civic Center. It is mainly a commute route with 2 reverse commute trips, and it runs along I-75.

<u>4.3.1.8 Route 440 – Tara Boulevard to Downtown</u>

This route meets MARTA at Garnett, Five Points, and Peachtree Center. It is both a commute and reverse commute route, and it runs along Tara Boulevard.

4.3.1.9 Route 441 – Jonesboro to Midtown

This route meets MARTA at Civic Center, North Avenue, Midtown, and Arts Center. It is both a commute and reverse commute route, and it runs along Tara Boulevard/ GA-41.

4.3.1.10 Route 450 – Newnan to Downtown and Midtown

This route meets MARTA at Garnett, Five Points, Peachtree Center, Civic Center, North Avenue, Midtown, and Arts Center. It is mainly a commute route with one reverse commute trip, and it runs along I-85.

4.3.1.11 Route 460 – Douglas to Downtown

This route meets MARTA at Garnett, Five Points, Peachtree Center, and Civic Center. It is both a commute and reverse commute route, and it runs along I-20.

4.3.1.12 Route 461 – Douglas to Midtown

This route meets MARTA Civic Center, North Avenue, Midtown, and Arts Center. It is mainly a commute route with 2 reverse commute trips, and it runs along I-20.

4.3.1.13 Route 470 – Hiram and Powder Springs to Downtown

This route meets MARTA at Garnett, Five Points, and Peachtree Center. It is mainly a commute route with one reverse commute trip, and it runs along GA-278 to I-20. It will soon have a new park and ride lot across from the Silver Comet Trail.

4.3.1.14 Route 480 – Acworth to Downtown

This route meets MARTA at Five Points, Peachtree Center, and Civic Center. It is both a commute and reverse commute route, and it runs along I-75.

4.3.1.15 Route 481 – Busbee to Midtown

This route meets MARTA at Civic Center, Midtown, and Arts Center. It is a commute route only. Routes soon to be in operation include Route 422 Panola Road to downtown Atlanta along I-20, Route 428 Panola Road to MARTA Medical Center along I-20 to I-285, which hits MARTA Indian Creek, Doraville, Dunwoody, and Medical Center, Route 432 Stockbridge to Downtown along I-75, and Route 442 Riverdale to Downtown along I-85.

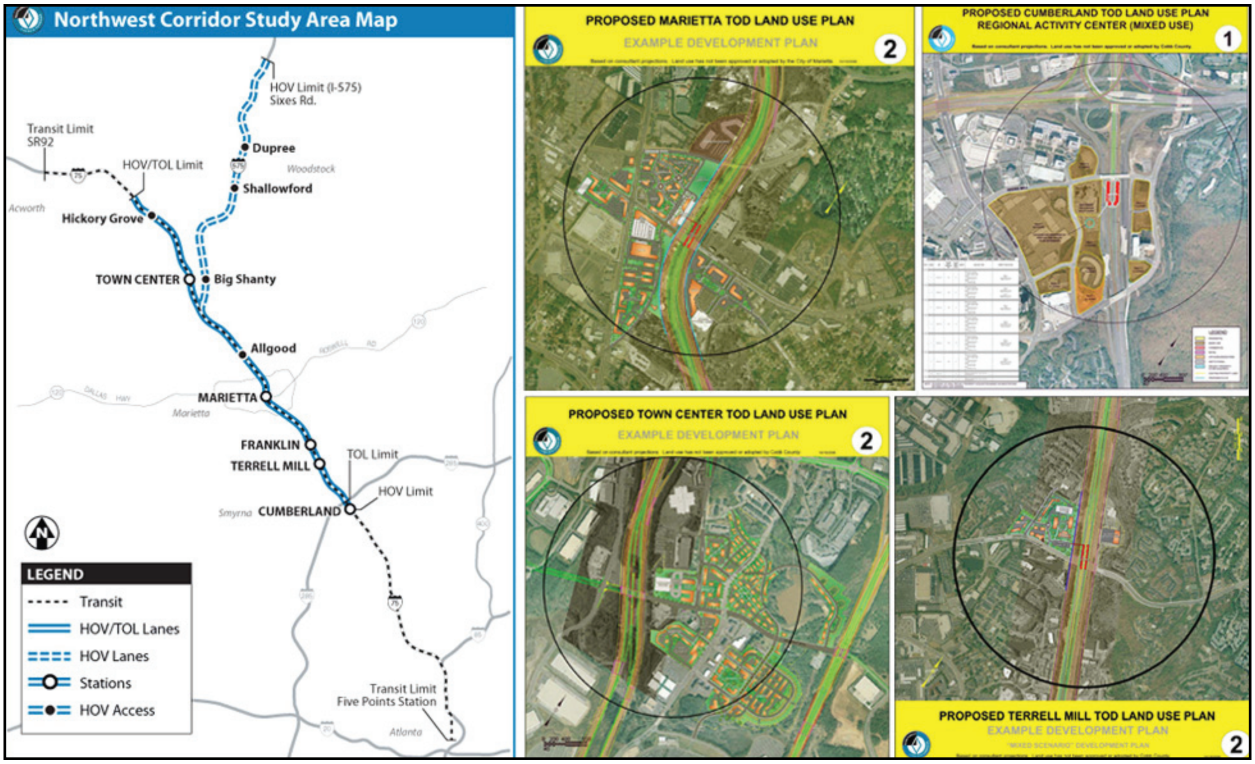

Figure 4.6: GRTA's Northwest Corridor Map and Land Use Plans

4.3.2 Northwest Corridor Project - Bus Rapid Transit [BRT]

This area involves one of the most congested corridors in the Atlanta region – including Midtown, Cumberland Galleria, Marietta, and Town Center. Heavy population growth is forecasted to continue steadily until 2030. The Northwest Corridor Project is a combination of efforts from GDOT's I-75/ I-575 HOV Lanes Extension Project and GRTA's Northwest Connectivity Study. The Northwest Connectivity study concluded that the BRT plan GRTA had created for the corridor coincided with the extension of highway lanes proposed by GDOT. By pooling their efforts, it is speculated that the process of implementation will move faster. This project is included in Governor Perdue's Fast Forward program.

The project currently deals with the extension of HOV lanes along I-75 North from Akers Mill, near the Cumberland intersection at I-285, to Hickory Grove Road as well as with the accompanying infrastructure – new ramps and interchanges. The design at this point may involve LRT, BRT, or express bus – BRT is most likely. HOV lanes may also be added along I-575 from Sixes Road to the intersection with I-75. The current plan includes stations at Town Center, Marietta, Franklin, Terrell Mill, and Cumberland.[30]

30 www.grta.org, Georgia Regional Transportation Authority. Nov. 10, 2006.

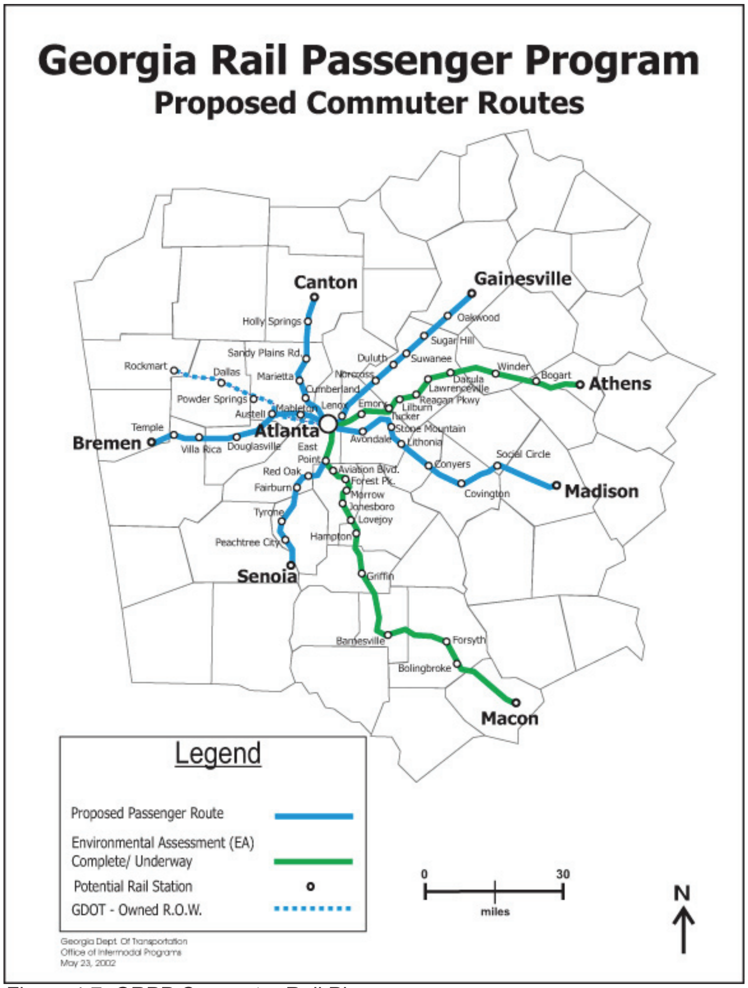

Figure 4.7: GRPP Commuter Rail Plans

4.4 Georgia Rail Passenger Authority [GRPA]

"It is the mission of the Georgia Rail Passenger Authority in conjunction with our partner agencies to plan, develop, finance, construct, and operate a cost effective network of Intracity and Commuter Rail Passenger Service along with any other complementary passenger service in order to provide a transportation alternative that enhances mobility for the citizens of Georgia and their visitors."

The GRPA works within GDOT, specializing in rail issues.

Georgia Rail Passenger Program [GRPP]

The GRPA's main body of work is the GRPP. The GRPP involves two kinds of rail transportation: commuter trains to serve Georgians going to work and intercity trains to connect communities in Georgia with the Southeast. There are plans for seven commuter routes reaching 55 communities. The seven intercity trains will connect nine of Georgia's largest cities and towns with Atlanta as well as reaching into Florida and South Carolina. GDOT's Office of Rail Programs operates in conjunction with the Georgia Rail Passenger Authority [GRPA] to utilize their efforts to solve regional transportation problems.

4.4.1 Commuter Rail

4.4.1.1 Atlanta-Athens

One of the two most developed routes, this 72-mile project is estimated to carry the largest amount of people in the commuter rail segment of the GRPP. By 2015, it is projected that 8,000 trips a day will occur. Over 80 percent will board at Gwinnett and De Kalb county stops for Emory, Atlantic Station, and the Multi-Modal Passenger Terminal [MMPT]. The route will predominantly run along CSX corridors along with a few stretches owned by Norfolk Southern [NS]. In 2006, negotiations with CSX were working towards gaining right of way, and CSX is assessing the issues of freight vs. passenger rail. The project will first open to Cedars Road in Gwinnett County, extending to Athens a year later.

The development of the MMPT works in conjunction with the development of the Atlanta – Athens and the Atlanta – Lovejoy - Macon commuter trains. The docking of the train is the catalyst for the existence of the station. The importance of the station hinges on many modes of transit coming together – the train is the missing link. It may be the mechanism through which Atlanta begins its process of reformation - looking backward at past transit methods in order to look forward.

4.4.1.2 Atlanta – Bremen

This 53-mile route will stop in Haralson, Carroll, Douglas, Cobb, and Fulton counties on its way to Bremen. This route will also be a part of the Southeast High-Speed Rail Corridor to Birmingham.

4.4.1.3 Atlanta – Canton

This 38-mile route will use the Georgia Northeastern line, stopping in Cherokee, Cobb, and Fulton counties.

4.4.1.4 Atlanta – Gainesville – Greenville, SC

This commuter route is along the 53-mile path to Gainesville – passing through Hall, Gwinnett, and Fulton counties. It will be a part of a the Southeast High Speed Rail Corridor to Charlotte.

<u>4.4.1.5 Atlanta – Lovejoy - Macon</u>

The second of the two most developed lines, this project is forecasted to carry 7,600 trips per day by 2030. Moreover, this train is furthest along the path towards fruition. Of total passengers, it is predicted that 75 percent will board at Spalding, Henry, and Clayton Counties with destinations at Hartsfield-Jackson, East Point, and the Multi-Modal Passenger Terminal. The trains will run along NS track, both existing and new. The services will be limited during the day and evening, taking into consideration the focus of commuter rail. The plan involves station platforms with ample park and ride lots along with double-deck passenger cars. Each train will have power outlets and wi-fi for laptop use. The infrastructure will be designed to allow speeds of 60-79 mph. This route was scheduled to be in operation by the end of 2006, and the Federal Transit Administration approved the plan in 2001 issuing a 'Finding of No Significant Impact' approving the route's environmental impact. Phase One of the plan will connect Atlanta to Lovejoy, Phase Two will include Griffin along the path, and Phase Three will terminate the route in Macon. From Lovejoy, the route will stop in Jonesboro, Morrow, Forest Park, and East Point with termination at Five Points MARTA and possible transfer at the MMPT.

<u>4.4.1.6 Atlanta – Madison – Augusta</u>

This 171-mile route is considered both commuter rail to Madison and intercity rail to Augusta. First running 68 miles to Madison, it will eventually connect to Augusta. It will run along CSX line and include in its path Newton, Rockdale, DeKalb, and Fulton counties.

<u>4.4.1.7 Atlanta – Senoia</u>

This 38-mile route will use CSX freight line and stop in Coweta, Fayette, and Fulton counties.

Figure 4.8: GRPP Passenger Rail Plans

4.4.2 Intercity Rail

4.4.2.1 Atlanta – Jacksonville

Service between Atlanta and Jacksonville has been studied for three years between 2002-2005. There is debate about the level of service that will be provided along this corridor. Conventional ridership involves one train per day in each direction at 79 mph, and the trip will take six hours. Moderate ridership involves three trips in each direction at a top speed of 79 mph. The high-speed service level involves three trains per day at a speed of 110 mph, cutting the trip time to five hours. The project is at a stand-still due to funding – federal funding for intercity rail typically goes to Amtrak. Congressional support is needed to progress the goals of passenger rail.

4.4.2.2 Griffin – Columbus

This route is an extension of the commuter rail from Atlanta – Macon. The Griffin stop just outside of Lovejoy is the connection point for a 78-mile track to Columbus.

4.4.2.3 Macon – Albany – Tallahassee, FL

This route will function as an extension of the Atlanta – Macon commuter route. The 106-mile extension to Albany will be followed by an additional extension to Tallahassee. It will use NS freight line, stopping in Dougherty and Sumter counties.

4.4.2.4 Macon – Jacksonville, FL

This route will connect Atlanta to Florida, and it will run on CSX track. It will also operate on the success of the Atlanta – Macon connection.

4.4.2.5 Macon – Savannah

This route will connect the Georgia coast with Atlanta, following the development of the Atlanta – Macon route.

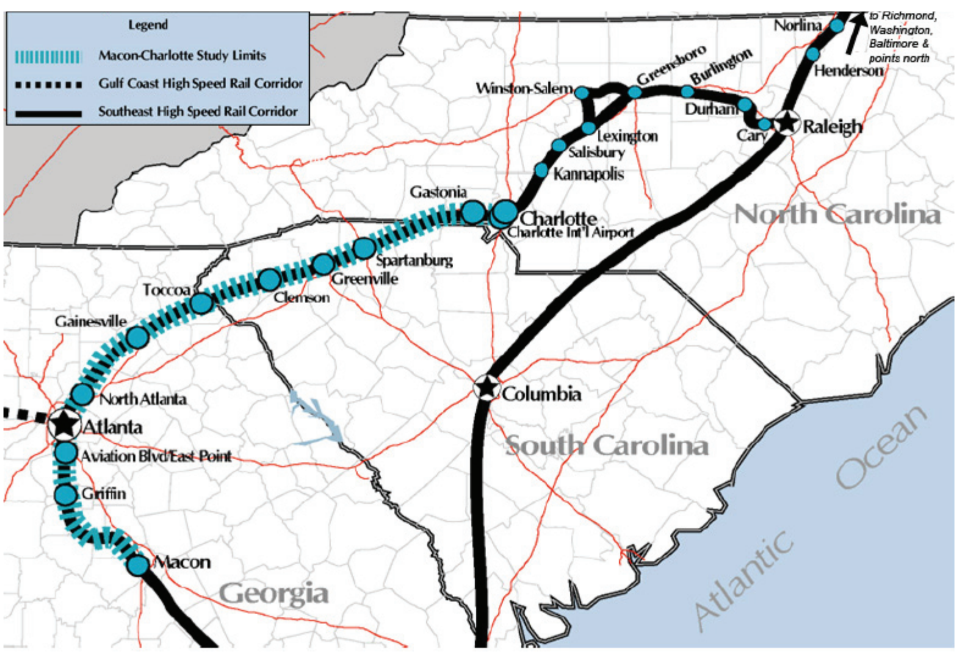

Figure 4.9: GRPP Southeast High-Speed Rail Corridor Plan

4.4.3 Southeast High-Speed Rail Corridor [SEHSRC]

Macon – Atlanta - Charlotte

The SEHSR Corridor is one of 11 high-speed corridors in the nation. The Macon – Atlanta – Charlotte study of 2004 analyzed the possibilities involving improvements of the NS freight line Charlotte – Spartanburg – Greenville – Atlanta – Macon. It seems that if passenger rail is to compete with the car and plane, the key is to make the mode faster. This route has many curves, so it would likely use high-speed tilting trains. The same sorts of trains are used to connect Washington DC to Boston. Attainable speeds of 70, 90, and 110 mph were assessed – it was proven that the NS alignment would operate best at 79-90 mph. This project is still in process, and service would be able to begin within five years of funding attainment.[31]

Figure 4.10: Amtrak Crescent Line

4.5 National Railroad Passenger Corporation [Amtrak]

The 1940's marked the battle between the plane and train, and the train lost the fight. By the1960's, passenger trains in the United States were sub-standard. The Rail Passenger Service Act was passed in 1970, and the creation of Amtrak soon followed in 1971. Amtrak is a nation-wide system that is operated and funded by the US government. The system serves

31 www.dot.state.ga.us/dot/grpa, Rail Passenger Authority. Jan. 18, 2007.

all except for one of the 29 cities containing a population of over one million and all except for one of the 27 cities containing a population of 500,000 to one million. The railroad system is accessible to 87 percent of the US population.

Currently, the southern region of the US has 6 Amtrak train routes. The Auto Train route travels Lorton, VA [Washington D.C.] - Sanford, FL [Orlando]. The Carolinian/ Piedmont route travels New York - Raleigh - Charlotte. The City of New Orleans route travels from Chicago – Memphis – New Orleans. The Silver Service/ Palmetto route travels New York – Washington DC – Charleston – Savannah – Jacksonville – Orlando – Tampa/ Miami. The Sunset Limited route travels Orlando – New Orleans – Houston – Los Angeles. The Texas Eagle route travels Chicago – St. Louis – Dallas – San Antonio – Los Angeles. The only route that includes Atlanta is the Crescent route which travels New York – Atlanta – New Orleans. There is one Amtrak station serving Atlanta at 1688 Peachtree Street [Peachtree at Deering]. The Crescent carried 263,080 passengers in 2005, a 2.5 percent increase from 2004.[32]

4.6 Metropolitan Atlanta Rapid Transit Authority [MARTA]

In the 1950's, it became evident that Atlanta needed public transportation if the city was going to operate smoothly. MARTA was created in 1965, and it purchased the Atlanta Transit System in 1972. From that point on, MARTA operated the bus system in Atlanta. The first line, the East line, operating between Avondale and Georgia State opened in 1979. Construction began later that year on the airport station which marked the main period of rail development in the 1980's.

4.6.1 Heavy Rail Transit [HRT]

In 1982, Peachtree Center, West End, Arts Center, and Midtown stations opened. In 1984, Lindbergh Center, Lenox, Brookhaven, Oakland City and Lakewood/ Fort McPherson stations had all opened. In 1986, East Point station opened on the south line, and Chamblee temporarily marked the end of the Northeast line. Bankhead station began service in 1992, and Kensington and Indian Creek formed the current end of the Eastern line – the first time rail extended beyond the I-285 perimeter. The Olympic Games in 1996 pushed many of the plans

32 www.amtrak.com, Amtrak. Nov. 10, 2006.

Figure 4.11: MARTA Heavy Rail Transit

forward. The North line, including Buckhead, Medical Center, and Dunwoody Stations, was completed. For the first time, MARTA rail included all 3 Atlanta jurisdictions – City of Atlanta, Fulton County, and Dekalb County.

In 2000, MARTA completed two new stations along the North Line at Sandy Springs and North Springs. Lindbergh City Center, a transit-oriented development (TOD) including office towers, parking decks, retail, and condominiums, opened in 2002. This marked Atlanta's interest in linking public transportation to community development. After this, attention turned back to improving the bus system. The Blue Flyer Service, the first express, limited-stop service in MARTA's system, began in 2003. The current rail system includes two lines - North Springs and Doraville to the Airport and H.E. Holmes and Bankhead to Indian Creek. The rail system is the framework from which many of the new transit proposals stem.

4.6.2 Bus Transit

4.6.2.1 Main Bus Network

MARTA operates around 200 bus routes throughout Atlanta.

4.6.2.2 Atlanta Tourist Loop – Routes 100, 101

MARTA has two routes included in the Tourist Loop – 100 Downtown and 101 Midtown. The downtown loop includes attractions such as the Georgia State Capitol, World of Coca-Cola, Underground Atlanta, Woodruff Park, Ebenezer Baptist Church, Martin Luther King Center, Jimmy Carter Museum and Library, Boisfeuillet Jones Atlanta Civic Center, Fox Theater, the Varsity, Georgia Dome, Georgia World Congress Center, the Georgia Aquarium, Imagine It! Children's Museum, Philips Arena, Centennial Olympic Park, and CNN Center/Inside CNN Tour. The Midtown Loop includes Fox Theater, the High Museum of Art, Piedmont Park, the Atlanta Botanical Gardens, and the Georgia Aquarium. Together, these two lines serve the community by linking important Atlanta landmarks and attractions for both tourists and Atlantans.

4.6.2.3 The Peach – Route 110

The motto for the Peach is "Live – Work – Play – Shop…Ride the Peach." This bus route runs from Lenox Mall at Buckhead to the State Capitol downtown. Stops along the path connect to attractions, hotels, hospitals, theaters, and shopping. The route meets MARTA rail at Arts Center, Buckhead, and Lenox Station. It connects to points of interest such as the Fox Theater, Emory-Crawford Long Hospital, Merchandise Mart, Georgia -Pacific Center, State Capitol, Phillips Arena/Georgia World Congress Center, City Hall, High Museum of Art, Atlantic Station, Georgia Aquarium, World of Coca-Cola, and Georgia Tech.

4.6.2.4 Blue Flyer Routes

These routes have a function similar to GRTA's Express bus system. GRTA even includes these five lines on their Xpress system map. Though not as regional in scope, these buses do make important connections. In some cases, these connections relate to MARTA's future plans. Route 216 is a precursor to MARTA's plan for BRT along I-20 E. Route 245 is a response to the congestion along the Clifton Corridor in the Emory district. Route 273 functions much like MARTA's plan for BRT to extend from the Hamilton Holmes station. It seems as if these bus routes are test cases for the plausibility of MARTA's future plans.

Route 216 connects Five Points station to Evans Mill Rd. in Lithonia along I-20 E. Route 245 connects 2 rail stations - Lindbergh Center to Kensington Station along Clifton Rd. Route 273 connects MARTA rail Hamilton Holmes Station to Fulton Industrial Blvd. along I-20 W. Route 283 connects MARTA rail Oakland City Station to Barge Rd. along Campbelton Rd. Route 289 connects MARTA rail College Park Station to Fairburn/ Palmetto.

4.6.3 Proposed Bus Rapid Transit [BRT], Light Rail transit [LRT], and Expanded Heavy Rail Transit [HRT]

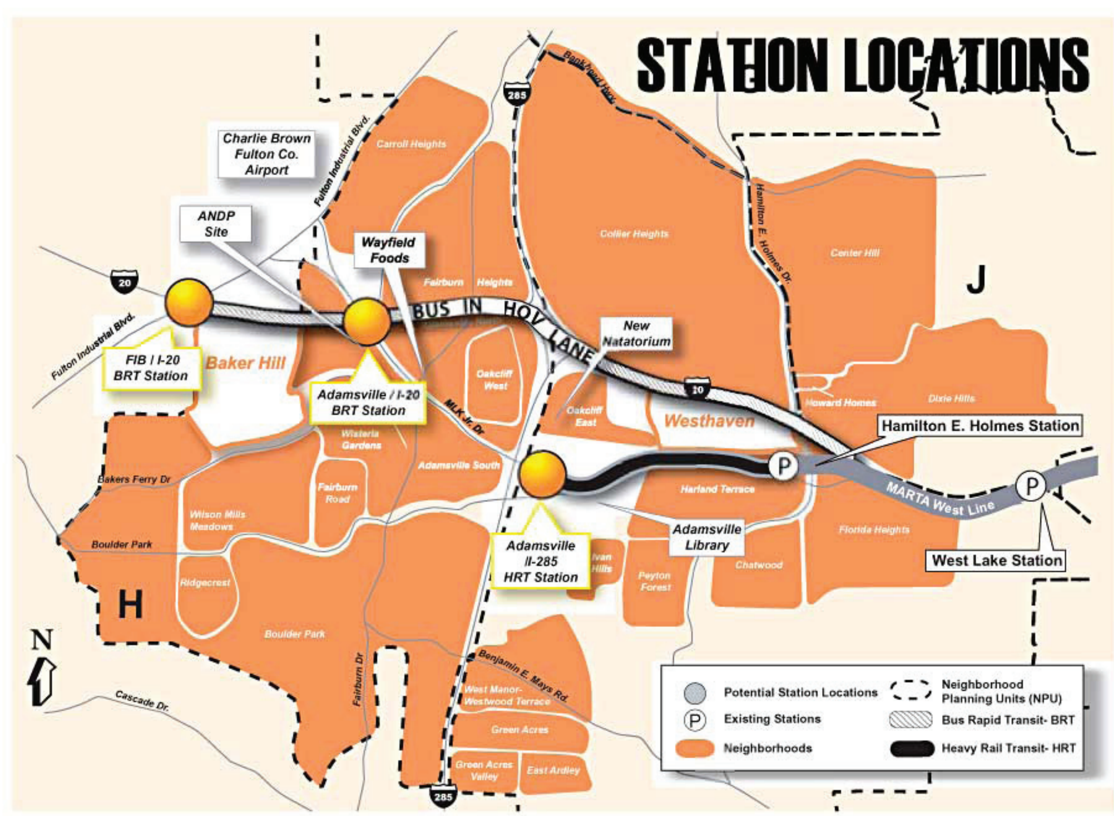

Figure 4.12: MARTA Westline Proposal

4.6.3.1 West Line

The West end of MARTA heavy rail currently ends at H.E. Homes station. Since 2002, MARTA has been developing solutions to the problem of the corridor of its west line. The Locally Preferred Alternative [LPA] was chosen in 2003, and it includes both bus rapid transit and a heavy rail extension. The west end of the MARTA rail line will extend to I-285 to an Adamsville/ I-285 station. The bus rapid transit will run along 1-20, leaving from the H.E. Holmes Station to a BRT station on Fulton Industrial Blvd. In between, it will stop at the Adamsville/ I-20 station. The BRT will share the HOV lanes along I-20. The plan includes two BRT stations and one heavy rail station. The stations are planned to facilitate development and create a new community character.

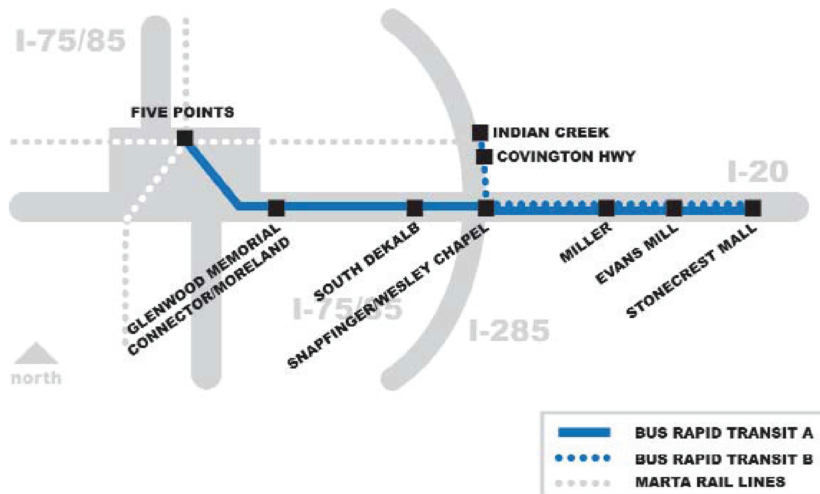

Figure 4.13: MARTA I-20 East Corridor Proposal

<u>4.6.3.2 I-20 East Corridor</u>

In 2002, MARTA began exploring mobility concerns along I-20 east. After reviewing many options, three types of transit were selected for deeper analysis – BRT, Light Rail Transit [LRT], and Heavy Rail Transit [HRT]. Option One includes two BRT lines – [A] connecting Five Points to the Mall at Stonecrest along I-20 and [B] connecting Indian Creek to the Mall at Stonecrest via an exclusive busway. Option Two includes a [A] Heavy Rail Transit [HRT] extension of the existing MARTA line running south from Indian Creek following I-285 to meet Snapfinger/ Wesley Chapel at the intersection with I-20. The line will then follow I-20 east to Stonecrest Mall. The [B] BRT line will run from Five Points to I-285. Option Three includes [A] Light Rail Transit [LRT] from Five Points to Stonecrest Mall with another [B] LRT line running from Snapfinger/ Wesley Chapel at I-285 to Stonecrest Mall. These plans explore important connections – I-20 at I-285 and the Glenwood Memorial Connector/ Moreland at the Beltline proposal.

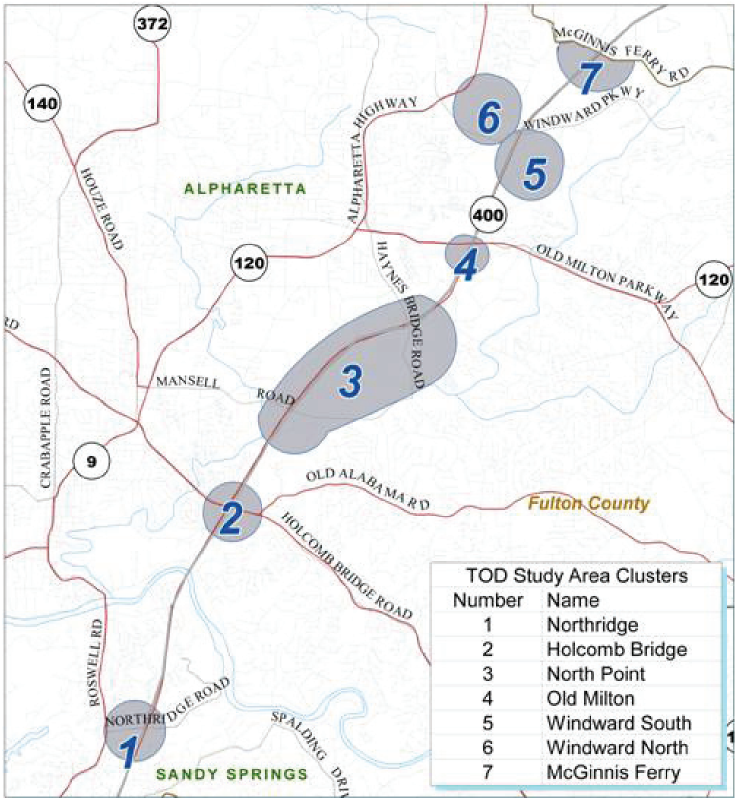

Figure 4.14: MARTA Northline Proposal

4.6.3.3 North Line Corridor

Since the expansion of GA-400 from I-285 to I-85, the North Line study area along GA-400 has experienced significant growth. What first began as what is called a “bedroom community” serving downtown Atlanta now has an identity of its own due to population and employment growth. It is expected that this corridor will continue to develop, and by 2030 employment will increase by 30 percent. The population is expected to increase 45 percent by 2030. MARTA explored the possibilities of expanding transit from the MARTA rail North Springs station to Windward Pkwy. The study moved towards Transit Oriented Development [TOD] in the surrounding area to examine feasibility along the GA-400 corridor. The study examines 7 “cluster areas” that have proven to have regional draw and strong chances of development. These areas are Northridge, Holcomb Bridge, North Point, Old Milton, Windward South, Windward North, and McGinnis Ferry. It is not yet specified what mode of transit may be used through this corridor. Extension of the existing HRT makes sense, but MARTA may also choose LRT or BRT.

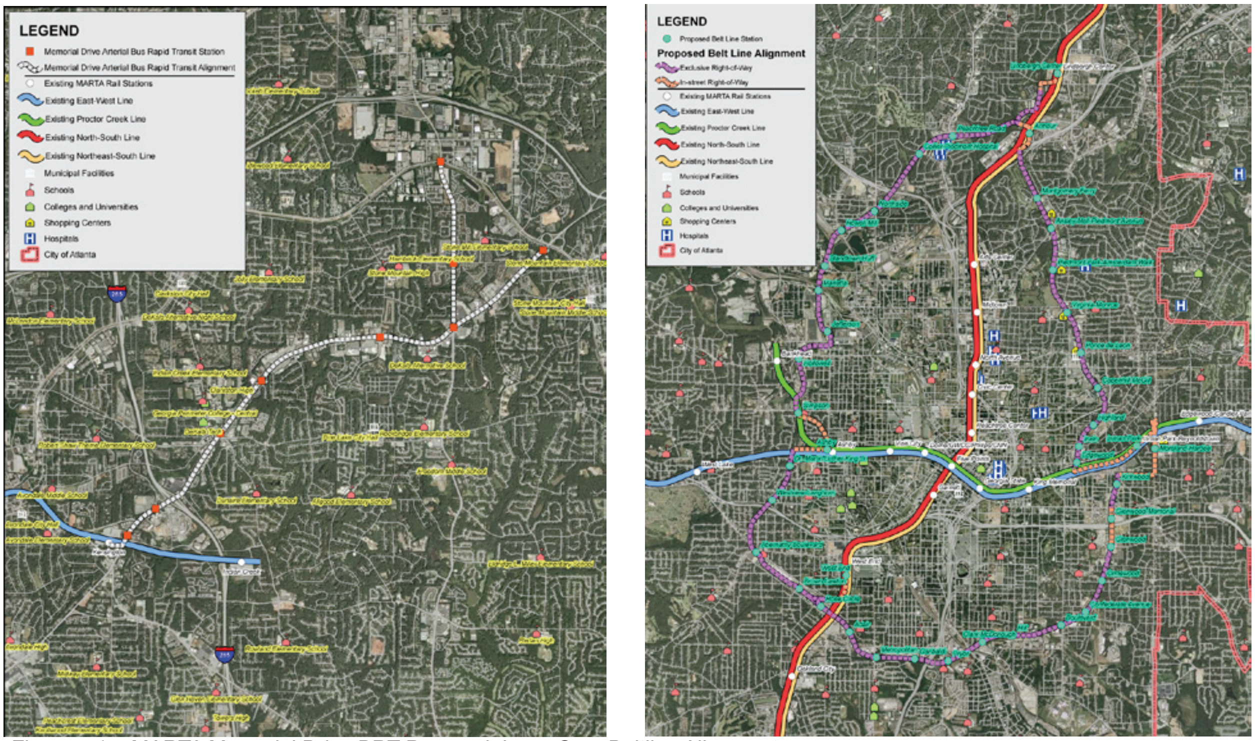

Figure 4.15: MARTA Memorial Drive BRT Proposal, Inner Core Beltline Alignment

4.6.3.4 Memorial Drive BRT

There is the beginning of a plan for BRT services to run along Memorial Drive from MARTA rail at Kensington Station to a park and ride lot near Stone Mountain.

4.6.3.5 Inner Core – Inner Core Beltline

In 2005, the Beltline and C-Loop concepts were explored together as potential partners in a project called the Inner Core Study. The Beltline is a 22-mile path that runs along an existing rail corridor, connecting 6 MARTA stations and providing connections to over 40 neighborhoods. The C-Loop is a path connecting the Clifton Corridor [Emory] with MARTA, Atlantic Station, Georgia Tech, Atlanta University Center, West End, and South DeKalb Mall. The two projects serve different population segments, neighborhoods, and employment centers. The Alternatives Analysis that came out of this project include the Beltline, C-Loop, a hybrid of both, and what is called “best segments” meaning all segments from the earlier studies considered feasible.

In 2006, MARTA split the projects in order for them to be analyzed separately. MARTA gives reasons such as focusing on distinct needs of each project and simplification as reasons for the rift. The southern portion of the C-Loop is included in Mobility 2030 as a plan. MARTA’s most current focus is on the Beltline, so the project became the Inner Core Beltline Study. The baseline is the Transportation System Management Alternative [TSM] which is the “best that can be done without major capital investment.” It includes two bus routes along Beltline path. The northwest line will run Bankhead to Lindbergh or Arts Center, and the east connection will be at King Memorial or Inman Park via Moreland Ave. The transit mode chosen for these will be LRT, Modern Streetcar, or BRT.[33]

4.7 Independent Bus Systems

Individuals, groups, and communities in Atlanta have taken it upon themselves to improve transit in Atlanta. The business community can assess transit problems within their framework to find solutions – sometimes working in conjunction with ARC and GDOT. Entrepreneurs may see opportunities within the transit system’s weaknesses – and turn them into private investment. Communities can drastically improve their own circulation by making transit changes that will allow for sustainability and growth.

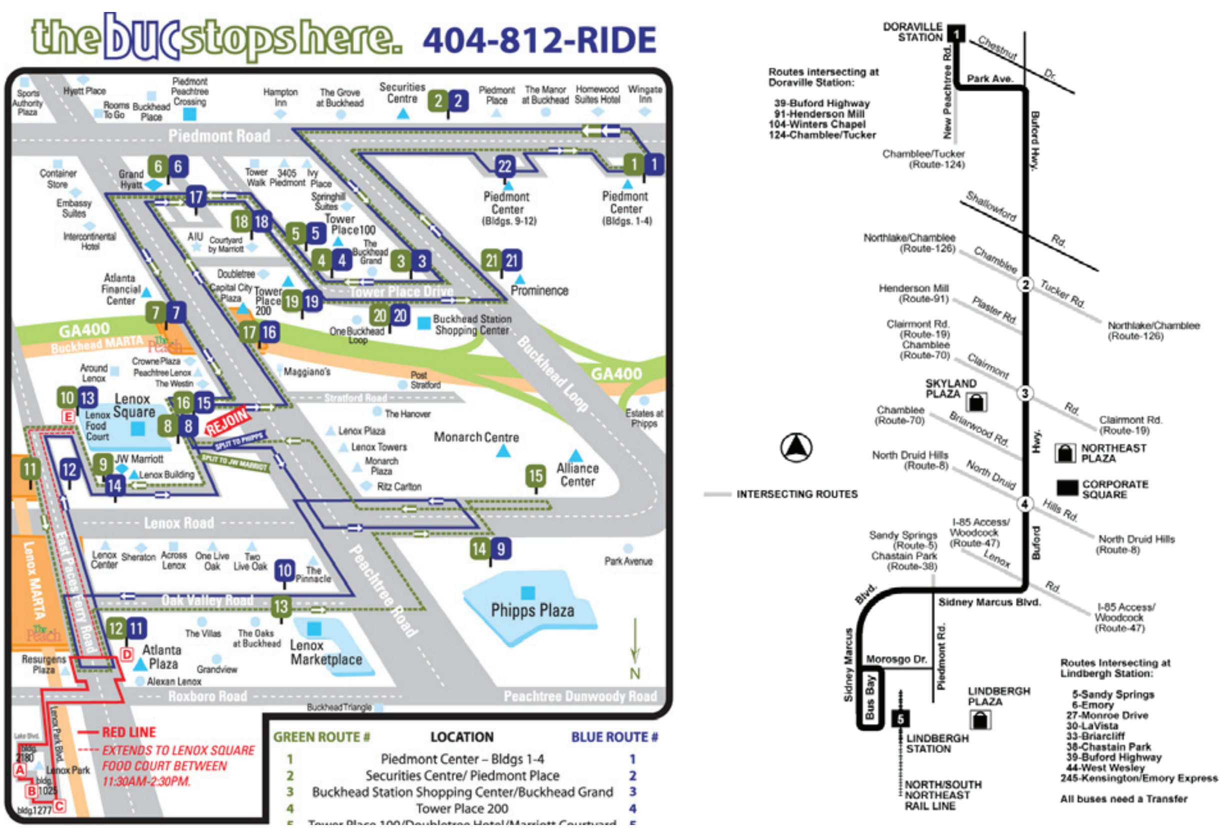

Figure 4.16: The Buc and the Gray

33 www.itsmarta.com, Metropolitan Atlanta Rapid Transit Authority. Nov. 10, 2006.

4.7.1 Local

4.7.1.1 The Buc

This service functions to connect the professional and personal needs of Buckhead, including offices, restaurants, hotels, and shopping. It connects to MARTA rail, and is completely free. It is funded by the Buckhead Community Improvement District [BCID] and ARC. It connects to MARTA rail Buckhead and Lenox station and bus route 23.[34]

4.7.1.2 Royal Bus Lines "The Gray"

Carlos Ochoa, an entrepreneur from Colombia, began a private bus service along Buford Highway in 2001. He offered free rides for one week, and the locals of Buford Highway were soon hooked. The route runs along the same as MARTA bus route 39. In fact, Ochoa holds a permit to run along the very same route as MARTA using the same stops since they are public property. The route runs from Lindbergh to Doraville MARTA rail stations. It has more than 60,000 riders monthly, 80 percent of which are Hispanic. Ochoa says of the service, "We are faster, cheaper, and we speak both languages." He charges $1.25 – $.25 less than MARTA's fare, but his service does not include transfers to MARTA. It was decided that MARTA could not accept transfers from a private entity. This service is one of the first privately-owned transit systems operating within the city.[35]

4.7.2 Regional

4.7.2.1 C-Tran

Clayton County began C-Tran in 2000, entering into a contract with GRTA. The bus routes were designed to connect to the airport, MARTA rail, and major commercial and academic centers in the county. The buses are powered by compressed natural gas, and they are all fully accessible with lifts. The routes service the areas of Jonesboro, Morrow, Forest Park, Lake City, Riverdale and activity centers such as Southlake Mall, Clayton College and State University, Southern Regional Medical Center, Fort Gillem and the Clayton County Justice Center. Currently, the C-Tran system includes 5 routes – 500, 501, 502, 503, 504. The system includes only local buses, and these connect to MARTA rail at the Airport Station.[36]

34 www.bucride.com, The Buc. Jan. 15, 2007.

35 Ramos, Rachel Tobin. "Private Bus Service on a Roll" Atlanta Business Chronicle. Jan. 14, 2005.

36 http://web.co.clayton.ga.us, Clayton County. Nov. 27, 2006.

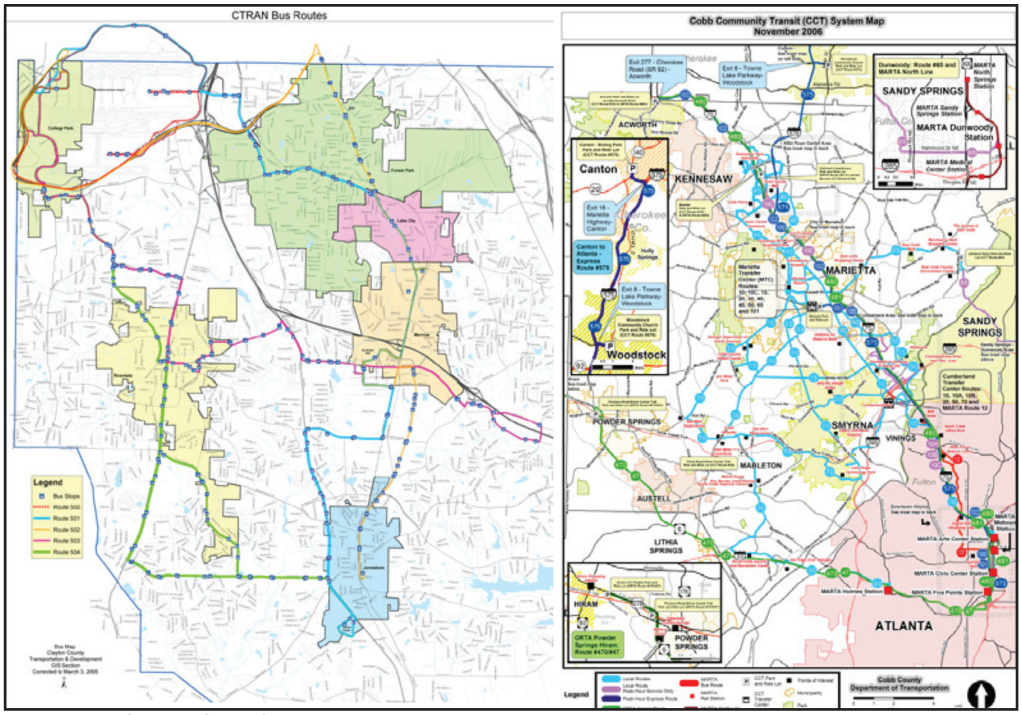

Figure 4.17: C-Tran, Cobb County Transit

4.7.2.2 Cobb County Transit [CCT]

CCT operates only within the confines of Cobb County running along I-75 from Atlanta through Vinings, Smyrna, Marietta, and Kennesaw, ending in Acworth. Services also run to Canton and Mableton. The network includes both local and regional bus. Local buses include 10, 20, 30, 40, 45, 50, 65, and 70. Express buses include 100, 101, 102, and 575, and they run along the same path as Xpress regional buses 480 and 481 operated by GRTA. Connection to MARTA rail occurs at Holmes, Midtown, Arts Center, Civic Center, and Five Points Stations.[37]

4.7.2.3 Gwinnett County Transit [GCT]

GCT formed in 2000 to provide Gwinnett County with both local and express bus service. The routes run along I-85, passing through Doraville, Norcross, Deluth, and Lawrenceville. The network includes 6 express routes, 101, 101A, 102, 102A, 103, 103A, and 7 local routes -10, 20, 30, 30A, 30B, 40, and 50. The express routes run along the same path as Xpress buses 410 and 412. The system meets MARTA rail at the Doraville Station.[38]

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37 http://dot.cobbcountyga.gov, Cobb County. Nov. 27, 2006.

38 www.co.gwinnett.ga.us, Gwinnett County. Nov. 27, 2006.

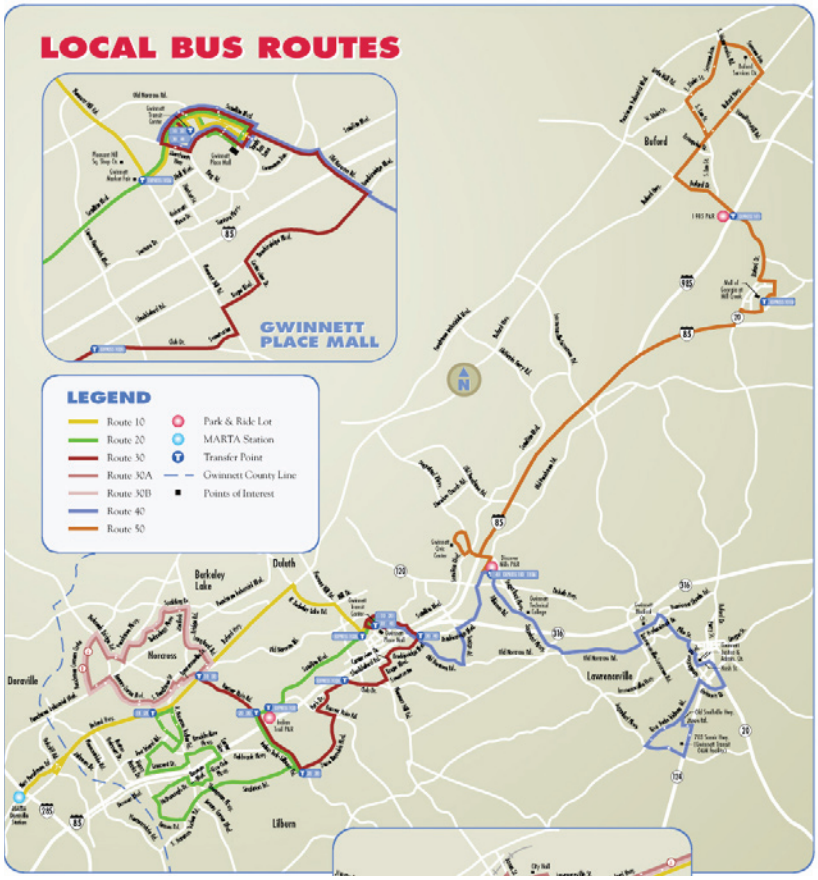


Figure 4.18:Gwinnett County Transit

4.8 Proposed Tram - Peachtree Streetcar

"It is the mission of the Atlanta Streetcar, Inc. to utilize and implement the modern Streetcar Technology in Atlanta's Peachtree Corridor and ancillary streets of the city. If, after a determination that this technology meets certain criteria for feasibility, it intends to help provide the citizens and businesses of Atlanta and its visitors traveling along the corridor with a safe, comfortable, and inexpensive urban transit mode within and adjacent to the Peachtree Corridor. The Streetcar will be designed to link with existing transportation systems and enhance the ability of the passengers of other modes to reach their destination seamlessly and without the use of an automobile. The Streetcar is also intended to capture new investment opportunities within the Peachtree Corridor – commerce, recreation, and housing – including workforce housing – and bring to the City additional jobs and tax revenues."

Peachtree Street, as the linear urban core of Atlanta, provides an opportunity for connection at street scale that no other current plan offers. This corridor includes 252,000,000

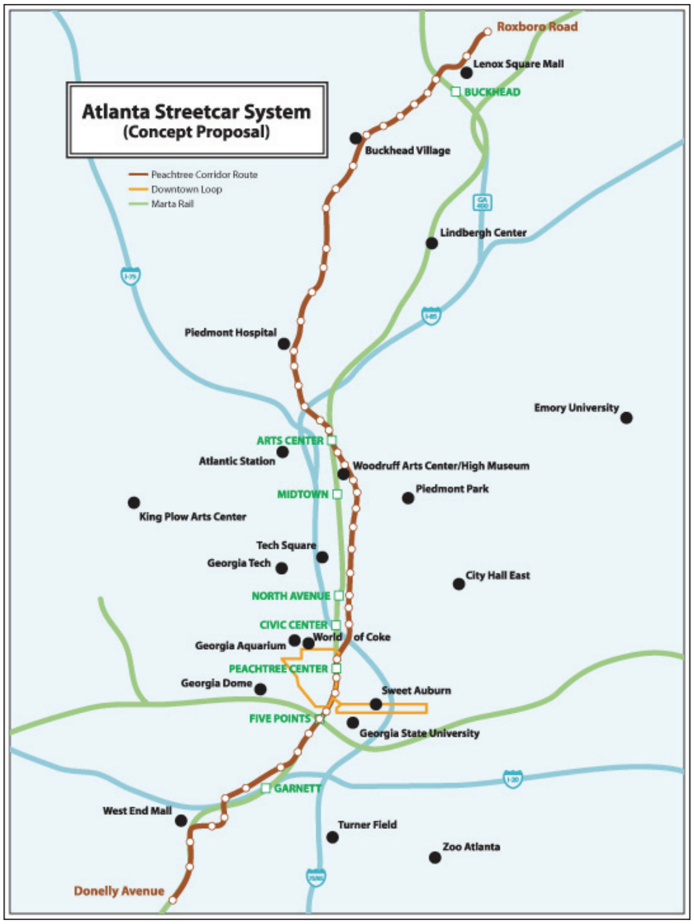


Figure 4.19: Peachtree Streetcar Concept

square feet of commercial space and more than 160,000 residential units. Atlanta Streetcar, Inc states, "The question posed here is not the regional one, i.e., how the metropolitan area will improve its transportation system to meet regional needs, address congestion, and improve air quality. The focus here is local, at the district or neighborhood scale – life at street level." Development along Peachtree Street is now at a density that will sustain walking residents, tourists, and visitors. The corridor contains many important destinations for both residents and visitors, such as the High Museum, Georgia Tech, Georgia State University, and the Aquarium. Atlanta Streetcar, Inc. is mainly concerned with how the residents of Atlanta use the street in their daily lives - to get to the grocery store, the doctor, or a meeting. Livable urbanism is the goal. The connection the Streetcar provides to other mass transit, especially MARTA rail, achieves true functionality and ultimately sustainability.

The system Atlanta used in the 1920's included several Streetcar routes. The current plan for the Streetcar is not based on the historical plan – it includes a main linear route and a

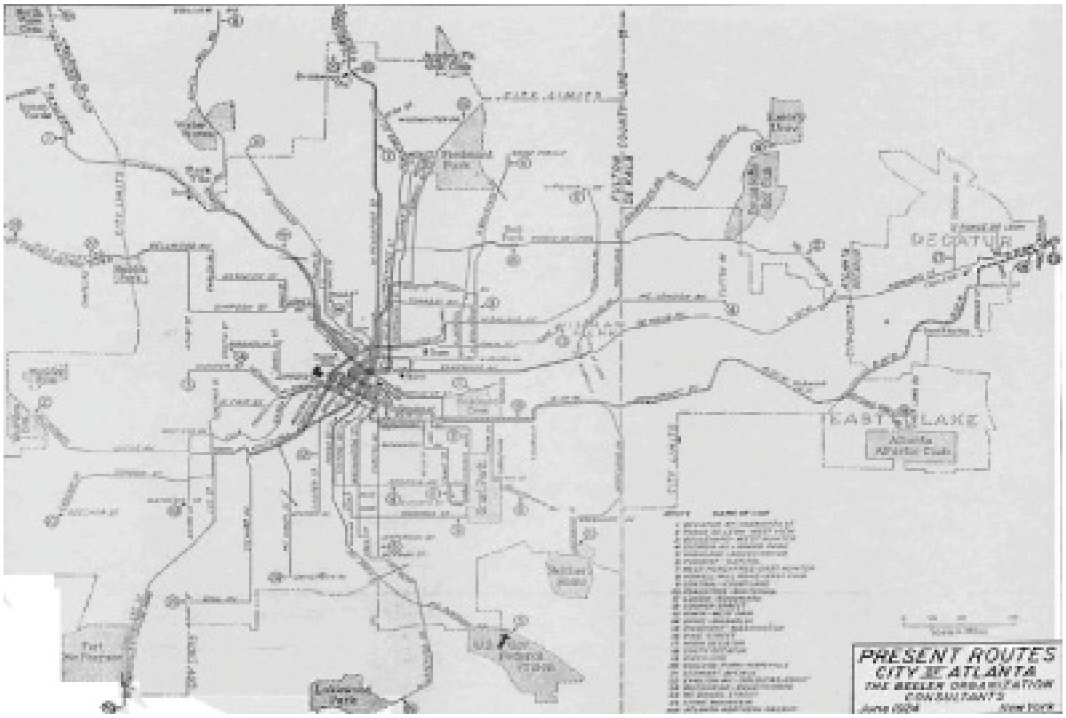


Figure 4.20: Historical Peachtree Streetcar

downtown loop to connect hotel patrons to tourist attractions. The Streetcars are trams running along track flush with the street surface to allow for sharing of the road with cars. There will be an overhead wire, and the cars will run at 15-20 mph (maximum 40 mph). The scale of the stops allow for close arrival to destinations – two to four blocks apart.[39]

4.9 Alternative Transit

When an external situation is not successful, turning inwards may be the solution. The current transit situation in Atlanta does allow for alternative methods of personal transportation including vanpool, car sharing, and bicycle. These modes involve groups organizing, groups being organized, or individual efforts to arrive at a solution that is not dependant on more common forms of public transit.

4.9.1 Vanpool

A vanpool consists of up to 15 people who agree to travel together along a similar path. GRTA organizes groups based on the similarities of commute patterns, and the group then decides where everyone will be picked up (residence, park and ride lot, or common

39 www.atlantastreetcar.com, Atlanta Streetcar, Inc. Nov. 27, 2006.

location). The cost of the vanpool correlates to the depreciation and maintenance costs of the van. Typically, a volunteer driver rides for free in exchange for their service. GRTA began their Vanpool program by purchasing 40 vans in 2002, with plans to increase to 350 by 2005. GRTA also gives a seat subsidy for the first 12 months of participation in the Vanpool program. In addition to saving money, vanpooling saves time since the vans are allowed to travel in the HOV lane. GRTA's plans run concurrently with other private companies such as MetroVanPool which operates more than 125 routes. Since GRTA's goal is to improve the mobility of Atlanta, it supports other private vanpool companies.[40]

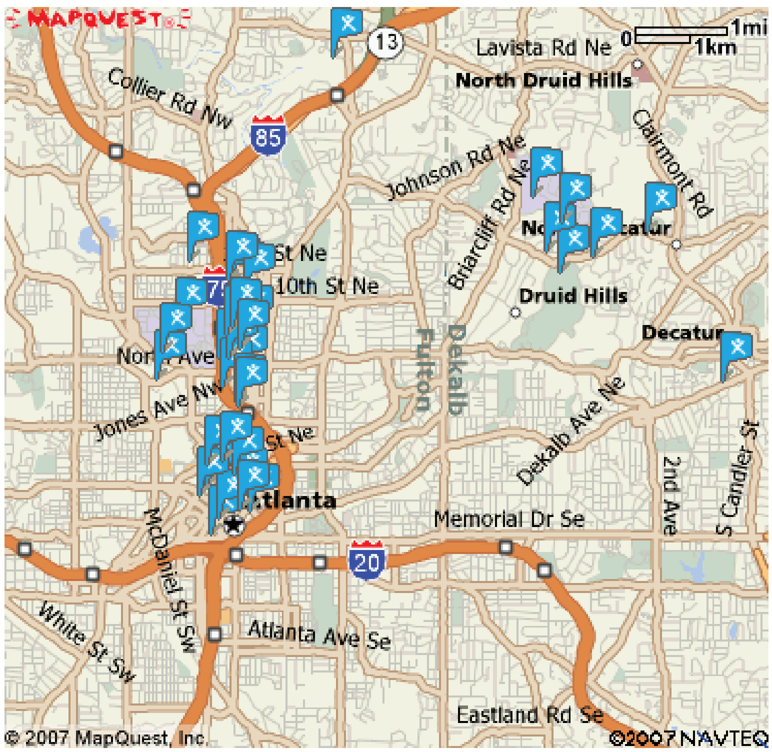


Figure 4.21: Current Flexcar Locations

4.9.2 Car Sharing [Flexcar]

Flexcar is the only car sharing company in Atlanta, and it also operates in Portland, Los Angeles, San Diego, San Francisco, Seattle, Portland, and Washington D.C. It currently has 41 vehicles in the Atlanta area, within areas including Buckhead, Decatur, Downtown, Midtown, and Emory. The user can specify the kind of preferred vehicle – sedan, minivan, truck, sports car, or

40 www.grta.org, Georgia Regional Transportation Authority. Nov. 10, 2006.

SUV. The type of vehicle obtained depends on what is located in the flexcar lot nearest to the user.

People become members of the service to use the cars as-needed. The cars are at strategic locations within the city, in a parking space on the street, surface lot, or a parking structure. There is typically not a large concentration of the cars in one area – the system works based on an effective dispersal of the cars. The member books by phone or online - and the

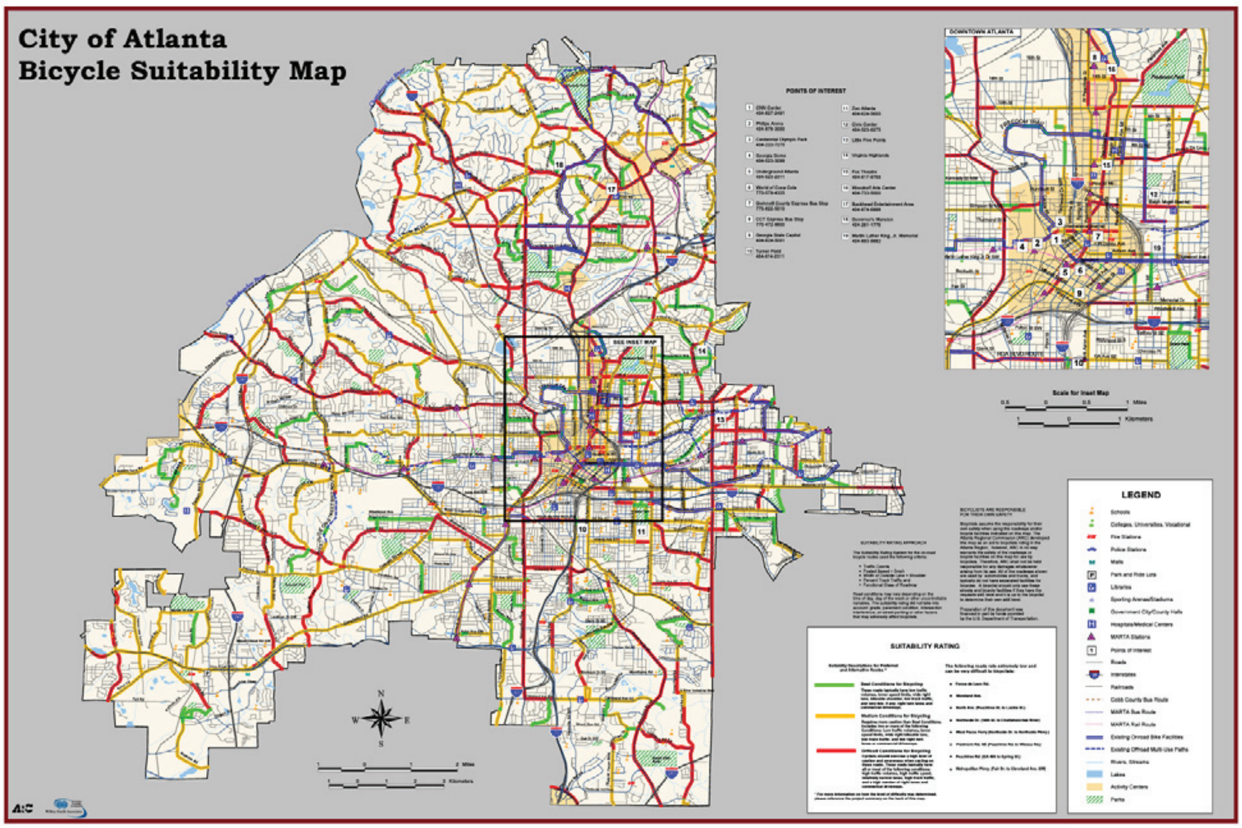


Figure 4.22: Bike Suitability Map

user is informed of the car location, type, and trip cost. The charge may be by the hour or day.[41]

4.9.3 Bicycle

As congestion in Atlanta increases, bikes are becoming an even more attractive method of transit within the city. Bicyclists are allowed to use most streets in Atlanta, but there are certain corridors that are more bike-friendly than others. Many corridors simply are not equipped to make bike travel safe. The ARC publishes a bike suitability map identifying

41 www.flexcar.com, Flexcar. Jan. 15, 2007.

corridors as best, medium, or difficult conditions for bike usage.

In 1973, bike issues in Atlanta were first made an issue of public concern. The ARC published “The Bicycle: A Plan and Program for its Use as a Mode of Transportation and Recreation.” This analysis aspired to develop a plan for future bike use in Atlanta by identifying corridors with the most potential for development. By 1979, $200,000 had been invested in bike development – 133 miles of bike routes. That same year, ARC published “Bicycle Planning and Implementation in the Atlanta Region.” The Bicycle and Pedestrian Taskforce, which began in 1992, focused their efforts more pointedly. In 1993, ARC published the “Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan”, which was updated in 1995. This was the precursor to a similar plan in 2000, which became a part of the 2025 Regional Transportation Plan [RTP].

The Bike/ Ped Plan of ARC, first published in 2002, has the intention of creating a functional bike network on a regional scale with on-road facilities. This plan is currently included in Mobility 2030 – the most current RTP. The goal is to facilitate pedestrian-friendly environments, concentrating on those located around town centers, activity centers, schools, and transit crossings. The process for improving bike transit in Atlanta currently involves identifying significant nodes for the “Bicycle Study Network.” These nodes are related to town centers and activity centers, etc. An alternatives analysis experiments with various scenarios of projects that may be in place by 2030.

The Atlanta Bicycle Campaign [ABC] is a bicycle advocacy group working to promote bicycle use in Atlanta. The group works with planning organizations, educates individuals, provides information, and gives cyclists a community forum. Working with the Downtown Transportation Management Association [TMA] and the Midtown Alliance, the ABC has developed a series of their own bike suitability maps for the Emory area, Downtown/ Midtown, Atlanta/ Dekalb, the Perimeter area, and various maps for other trails such as Silver Comet [from Mableton/ Powder Springs to Alabama].

The Perimeter Transportation Coalition [PTC] is a Transportation Management Agency [TMA], a combination of public and private organizations that come together with the common goal of improving accessibility to the central business core of Atlanta. Among other modes of transit, they are actively trying to improve bike commute awareness in Atlanta. The PTC educates the potential user on what roads are best and what route to choose for the commute path. They will even send someone to join the commuter on their first commute route.[42]

4.10 Transit Components

Along with transit comes supporting facilities such as the multi-modal station and park and ride lot. These are the frames within which transit operates –the identifiers of transit connection, beginning, or end. These components are the nodes of crossing and termination. The existence of these facilities can lead to the creation of other nodes while making their own connective positions even stronger. The station is interesting in terms of complexity of movement, while the park and ride lot is interesting in terms of stagnancy and reposition.

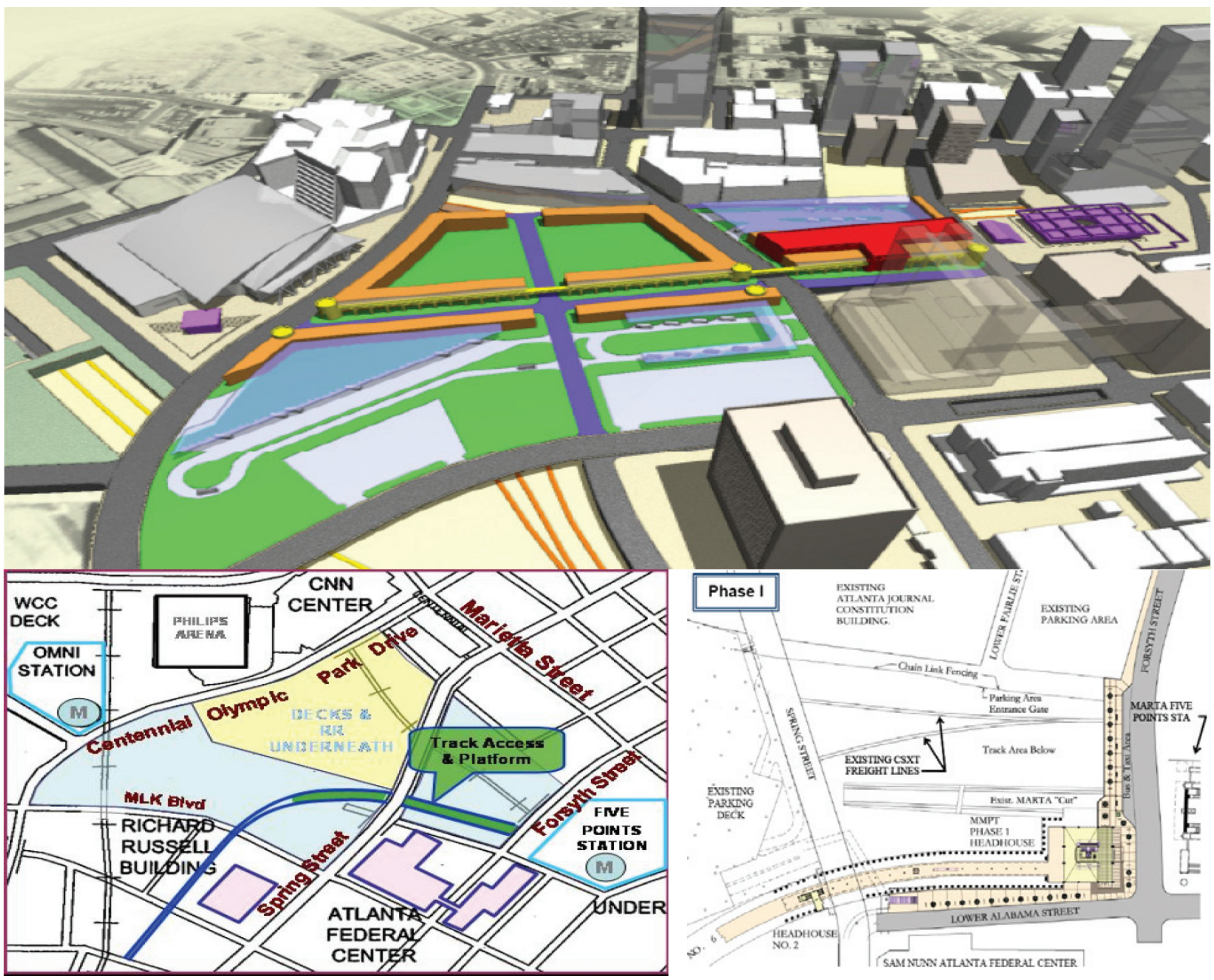


Figure 4.23: MMPT Design Proposal

42 www.atlantaregional.com, Atlanta Regional Commission. Nov. 2, 2006.

4.10.1 Multi-Modal Passenger Terminal [MMPT]

The MMPT is designed to accommodate commuter and intercity trains along with regional and local buses. Direct access to MARTA's Five Points station and Philips Arena station will allow easy transfers to rail and bus. Activity and employment centers will be easy to access by foot from the MMPT or via transfers to other modes. The first phase of the plan will accommodate the rail service to Lovejoy and a direct connection to the Five Points station. As area needs become more complex, the MMPT will operate to accommodate these needs. There is also discussion of the Amtrak station on Peachtree at Deering relocating to the MMPT.

The MMPT will be located between Spring and Forsyth Streets – close to many work and recreational nodes in downtown. The location is very similar to the placement of Union Station, which was in operation in Atlanta for 75 years. Access to buildings such as the Nunn Federal Center, Russell Federal Building, Georgia World Congress Center, Georgia Dome, Philips Arena, CNN Center, and Underground Atlanta give the MMPT a central location. This area currently contains the most jobs in Atlanta. It is also the largest concentration of government operations in the Southeastern US. It is anticipated that the MMPT will become a stimulant for development in this area by drastically improving connectivity. The location is near to the cross of rail lines, the gulch, that were the catalyst for Atlanta's inception. Combining that fact with the crossing of MARTA rail at Five Points station, this area seems to be the most logical place in Atlanta to start making a major connection. It's location will enable it to provide commuter rail access from stations in 23 counties around Atlanta, regional bus service to the 13 counties in the Atlanta area, intercity bus and rail to make connections throughout the state and to other states in the Southeast. One of the most important benefits of this major connection point is the opportunity it will open up to a significant population segment in Atlanta – those unable to afford a car.

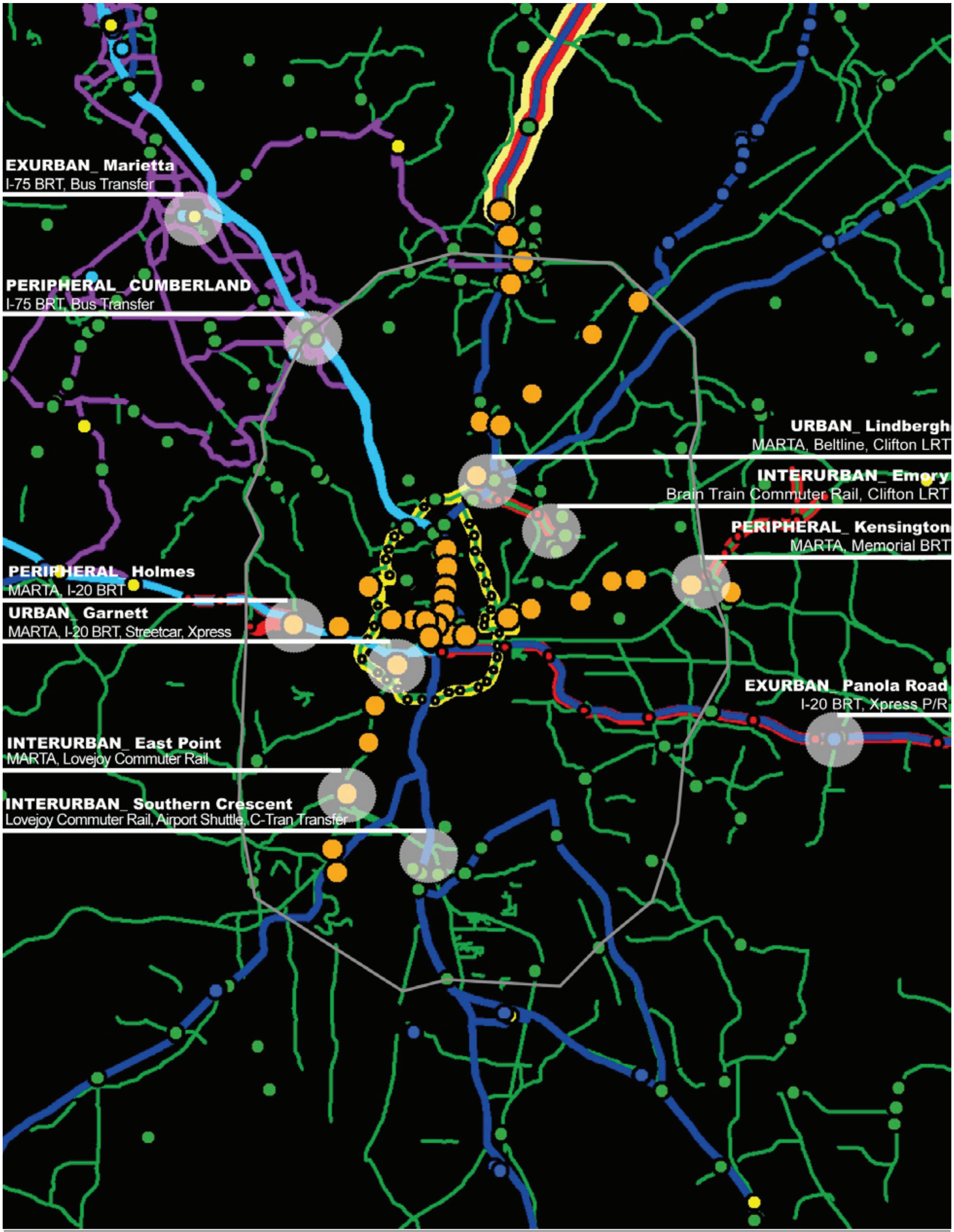
The phasing of this project is critical to its proper development. Phase I, scheduled to begin in 2006, relies on the connection to Lovejoy via its commuter rail line. This phase involves a 1,000' long platform along which two tracks run on either side. The main entrance will be at the corner of Forsyth and Alabama, with a direct connection to MARTA's Five Points station underneath Forsyth. The second entrance will be on Spring Street, along the CNN parking decks. The design also includes a bus and taxi drop-of area on Forsyth and an underpass connection to MARTA's Five Points station. The phasing allows for expanded commuter rail and commuter buses, Amtrak, and intercity bus service.

In 1994, the MMPT design proposal did not include regional bus which led to a reevaluation in 2000 to allow for expanded operation of GRTA regional bus and better connection to downtown development projects. In 2000, GRPP and Central Atlanta Progress had a meeting to ensure that the new design would integrate all the needs of the intermodal partners. In 2001, the new design proposal was approved by all involved parties. Since then, GRTA's regional bus plans do not include connection to the MMPT. Currently, work is being undertaken to document land and development rights for the MMPT as well as acquiring right-of-way from the City of Atlanta.[43]

4.10.2 Park-and-Ride Lots

The car is the identifier of the individually transported. As individual transport moves towards collective, the car is left behind in the suburbs or in the city. Therefore, the park and ride lot becomes the enabler for movement towards collective transit – an integral part and a key success factor in suburb to city transit. Atlanta currently has more than 5,000 dedicated spaces in park and ride lots located adjacent to interstates and highways. The majority of these lots are located outside I-285. MARTA also has park and ride lots to support its 29 rapid rail stations – 25, 781 total parking spaces. Park and ride lots are a significant portion of future transit development.

43 www.dot.state.ga.us, Georgia Department of Transportation. Nov. 30, 2006.



THE RESULT: NODES OF FUTURE TRANSIT TRANSFERENCE

Figure 4.24: Potential Nodes of Transit Transference

CHAPTER 5

CONCEPTUAL DESIGN OF FUTURE TRANSFER NODES

Definition of Nodal Scope

Urban – within the Beltline boundary
InterUrban – between the Beltline and I-285
Peripheral – along I-285
ExUrban – outside the boundary of I-285

Research Method: The GIS mapping research began with the Atlanta Regional Commission's Regional Transportation Plan - Mobility 2030 [lines shown in green] as a base. The Georgia Regional Transportation Authority contributed shapefiles of current and future plans for the Xpress regional bus system – including polygon layers for park and ride lots and vector layers for bus routes. MARTA contributed route and stop/station shapefiles for the existing heavy rail system as well as the most current data for the proposed Westline BRT and HRT extension, Memorial BRT, I-20 East BRT, Clifton Corridor LRT, Northline BRT, and the Beltline. Cobb County Transit contributed shapefiles for routes of the local and regional bus system, park and ride lots, and transfer stations. All other data was researched in map form, and then added to the GIS file to arrive at the result – Atlanta's future transfer nodes.

Ten Nodes:

Urban
1 Garnett
2 Lindbergh
InterUrban
1 Emory
2 East Point
3 Southern Crescent
Peripheral
1 Cumberland
2 Holmes
3 Kensington
ExUrban
1 Marietta
2 Panola Road

Design Purpose

Transfer 1 : to move to a different place, region, or situation; 2 : to change from one vehicle or transportation line to another
Station a stopping place: 1 : a regular stopping place in a transportation route 2 : the building connected with such a stopping place.
Wait to remain stationary in readiness or expectation

To transfer from one situation to the next. The corresponding station, remaining stationary, awaiting future happenings. Opposing forces of the movement of transit and stagnation of the stop – mutual dependency. How are these reconciled? In the case of transit, we wait for the door to open on the assumption we will go somewhere else. We want to connect to another place in the city, we want to transfer to our next destination. Our mobility as individuals depends on this successful transfer. To stop or to station ourselves is to wait - stand or sit, talk on a cell phone, read the newspaper or a magazine, watch other people, think about what to make for dinner. Perhaps strike up a conversation with a stranger. All of this takes place in the station because we are, after all, waiting.

Sitting, standing, crouching, perching, positioning the body. We position our bodies to prepare for the wait. How does the body adapt? The spaces around transit should make the wait as pleasant as possible – connecting to the surroundings, providing protection from the elements, maybe even making a connection that did not previously exist – but most importantly, becoming an enjoyable destination and thoroughfare along the path of daily life.

GARNETT — Node Type: Urban

Figure 5.1 Garnett Node in GIS/ CAD

The Garnett transfer expansion is designed as a MARTA parasite. Connectivity to the MARTA station the principle goal – secondary connections include the downtown loops of the I-20 East BRT and Xpress regional buses #430, 441, and 470 [McDonough, Jonesboro, and Hiram/ Powder Springs respectively] as well as the Peachtree Streetcar. The Garnett MARTA station runs parallel with Peachtree Street – the station itself is between Garnett and Brotherton. The main station entrance is on Trinity; it is a tree-lined passage nearly as long as the station. As the Peachtree Streetcar meets the corner at Trinity, the transfer expansion references this by turning towards Peachtree – creating a transfer block bounded by Trinity to the North, Garnett to the South, Peachtree to the East, and the MARTA passage to the West. This space is currently occupied by a parking lot.

The parasite was designed as a literal interpretation of sectional requirements for connection of the various modes of transit. The sectional spline includes 1] a seating/ waiting area for the Peachtree streetcar, 2] a pedestrian passage, and 3] a seating/ waiting area for the Xpress bus and MARTA buses. The module is 10' in length, connecting at grade to the MARTA passage which is 10'-15' above the at-grade connection along Peachtree. The pedestrian passage is an important path between Garnett and Trinity for those who use the site without any need for transit. It should function to pull people through the site – whether they are transferring via transit or via street.

Figure 5.2 Garnett Site Plan

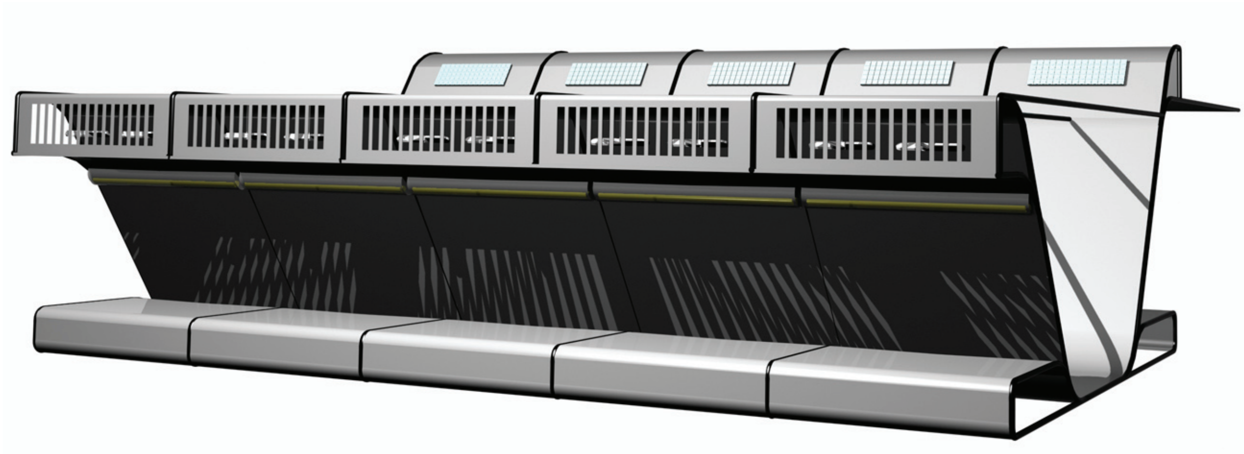


Figure 5.3 View From Northeast

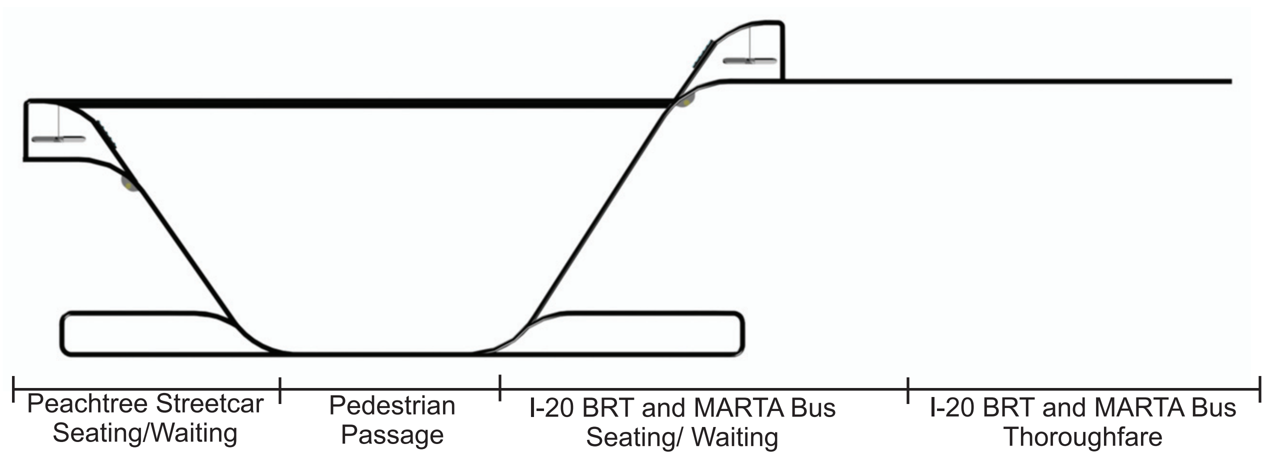


Figure 5.4 Relationships Between Transit and Individual

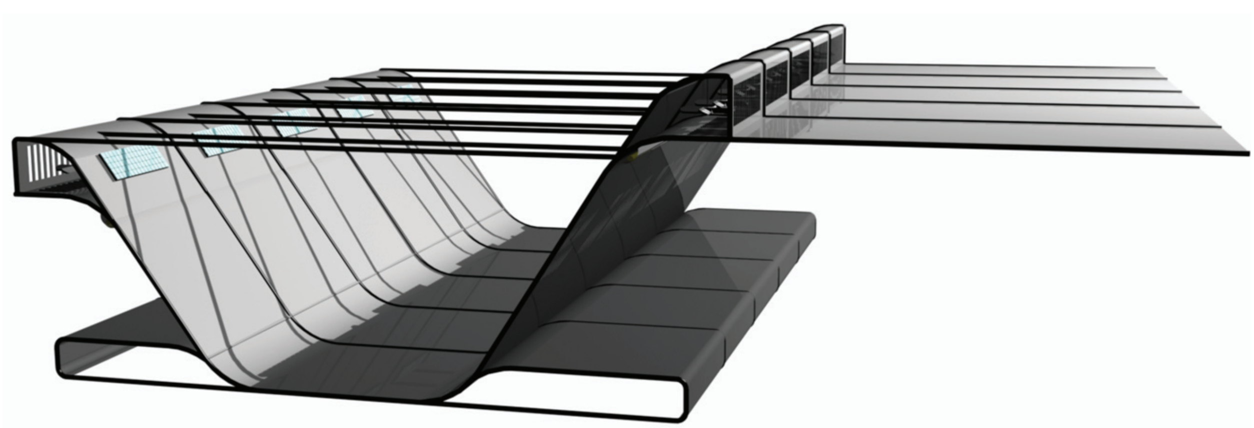


Figure 5.5 View From Northwest

Figure 5.6 Illustration of Designed Parasite Attaching to Garnett MARTA Station

GARNETT SITE DOCUMENTATION

Figure 5.7 Garnett Site View 01

Figure 5.8 Garnett Site View 02

Figure 5.9 Garnett Site View 03


Figure 5.10 Garnett Site View 04

Figure 5.11 Garnett Site View 05


Figure 5.12 Garnett Site View 06

LINDBERGH Node Type: Urban

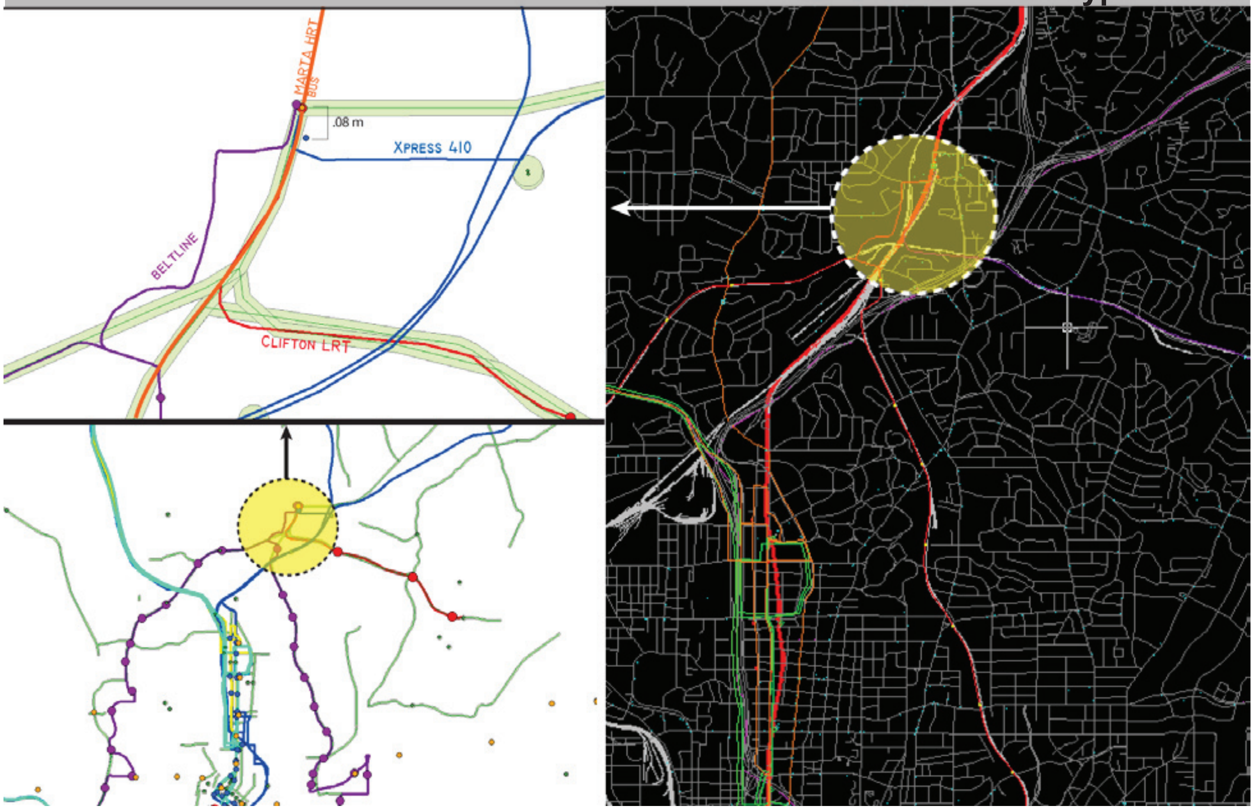


Figure 5.13 Lindbergh Node in GIS/ CAD

The Lindbergh transfer is primarily defined by its connection to MARTA – it meets the northern termination of Clifton light rail and the Beltline. The connection is a loose landform that rises to meet height requirements of rail crossings. This urban node thrives on the activity of the Lindbergh area – currently there are a few construction projects for mixed-use developments. Recently, so many multi-family developments have been built to the extent that Lindbergh station is surrounded by housing on all sides. The area is severely lacking a common area for the residents to meet in the outdoors, such as paths for biking and jogging, a place for children to play, and paths for taking the dog or ferret for a run. This node has the potential to link the various housing complexes with a common need for public space. For this reason, the paths are not the efficient vertical lines of the elevator or the economical diagonals of stairs - but meandering paths that twist and turn so that the wanderer forgets he/she is passing over rail lines and that the slope is meeting ADA standards. To the west of the Beltline is single-family housing – their backyards line up with the development. This presents an opportunity to engage their neighborhood with the development that is going on in their backyards. The bridge over transit becomes the bridge between two very different communities.

Figure 5.14 Lindbergh Site Plan

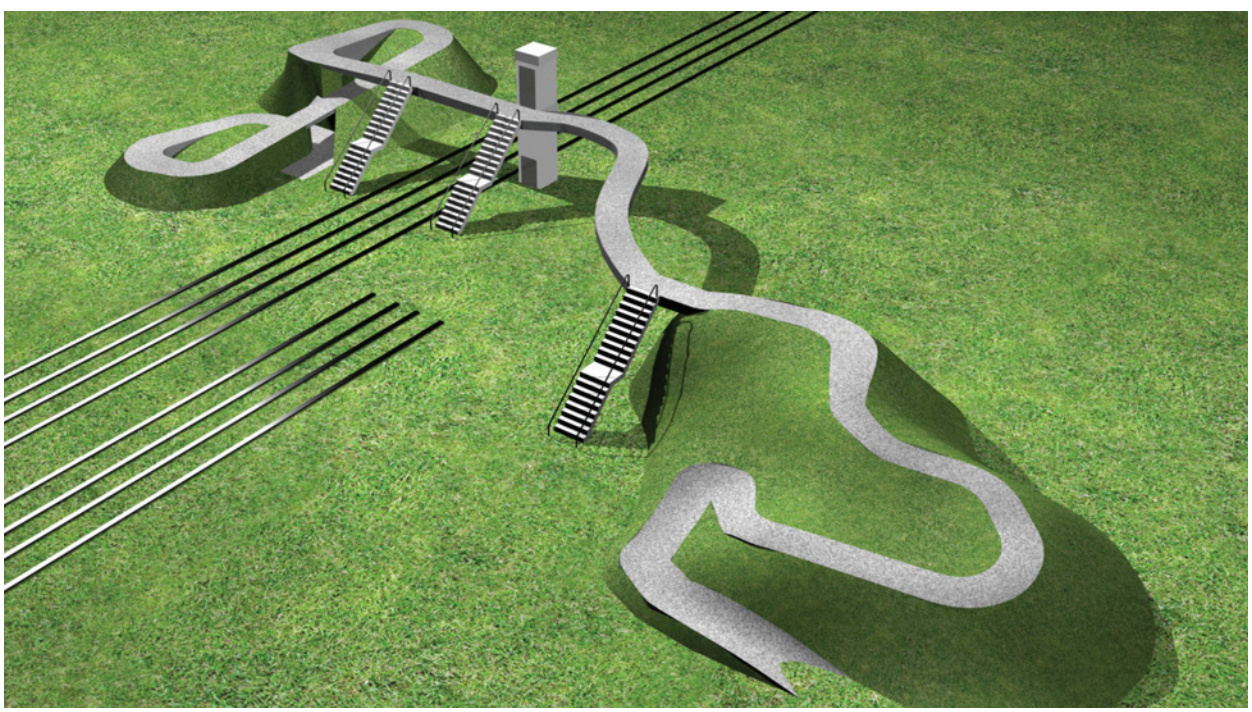


Figure 5.15 Bird's Eye View

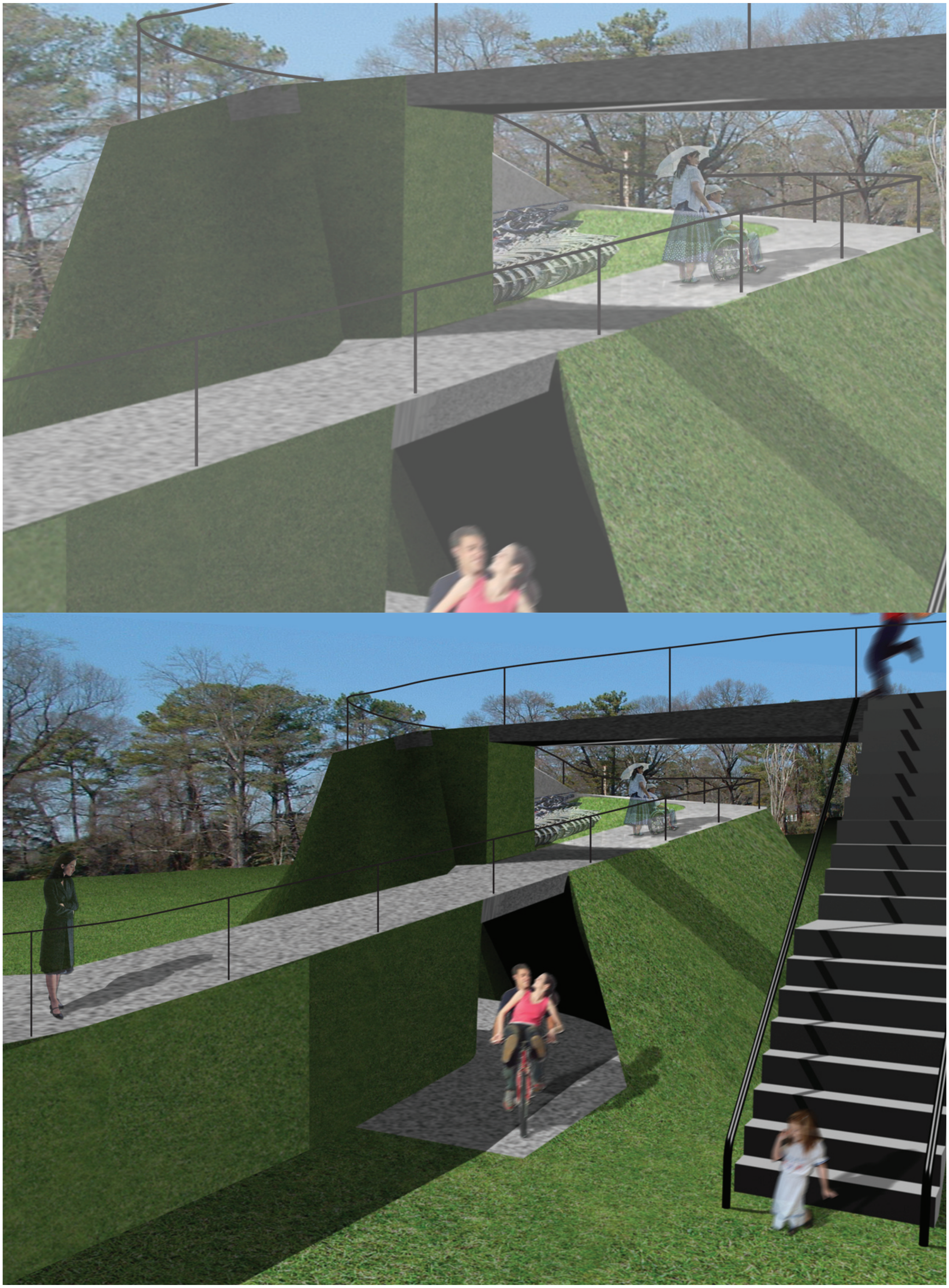


Figure 5.16 Western Ramp Connecting to Neighborhood

Figure 5.17 Illustration of Landform Bridging Train Tracks

LINDBERGH SITE DOCUMENTATION

Figure 5.18 Lindbergh Site View 01

Figure 5.19 Lindbergh Site View 02

Figure 5.20 Lindbergh Site View 03


Figure 5.21 Lindbergh Site View 04

Figure 5.22 Lindbergh Site View 05


Figure 5.23 Lindbergh Site View 06

InterUrban Node Modulation

The InterUrban nodes work in conjunction, sharing a modulated kit of parts to increase efficiency and cost effectiveness while providing a standardized aesthetic that can be manipulated and transformed to adjust to different site conditions and programmatic needs.

The base for the modulated design is the 10' wide bench, it includes 2 modules. The solar-powered seating module provides comfort stemming from environmental issues – wind, rain, and heat. Waiting on transit in the heat of Atlanta summers is not pleasant. If the modules are used all over the city, they should be as energy-efficient and cost-effective as possible. Thus, a solar panel containing silicone cells is attached to the module to provide power to the fan - pulling air in from the outside and forcing it downwards. The vents have a filter layer to allow wind but not rain. A light tube is in the crevice where the lower vent meets the back of the seat. The protective seating module is the shield which protects the transient individual from the elements. The overhang comes out 6' from the edge of the seat – providing space for the seated as well as standing room in the event of overcrowding. The seating extends 18" from the back of the bench.

The materials for the module include thermo-formed plastic and bent metal pipe. Plastic is necessary for the cleanliness a transit stop requires, its ability to adapt to body curvature, and its light-weight material property needed for the overhang. The bent metal pipe provides the structure for the plastic to be inserted into. These alone result in a top-heavy module. To reconcile this, a sheet of concrete will rest atop the plastic that meets the ground.

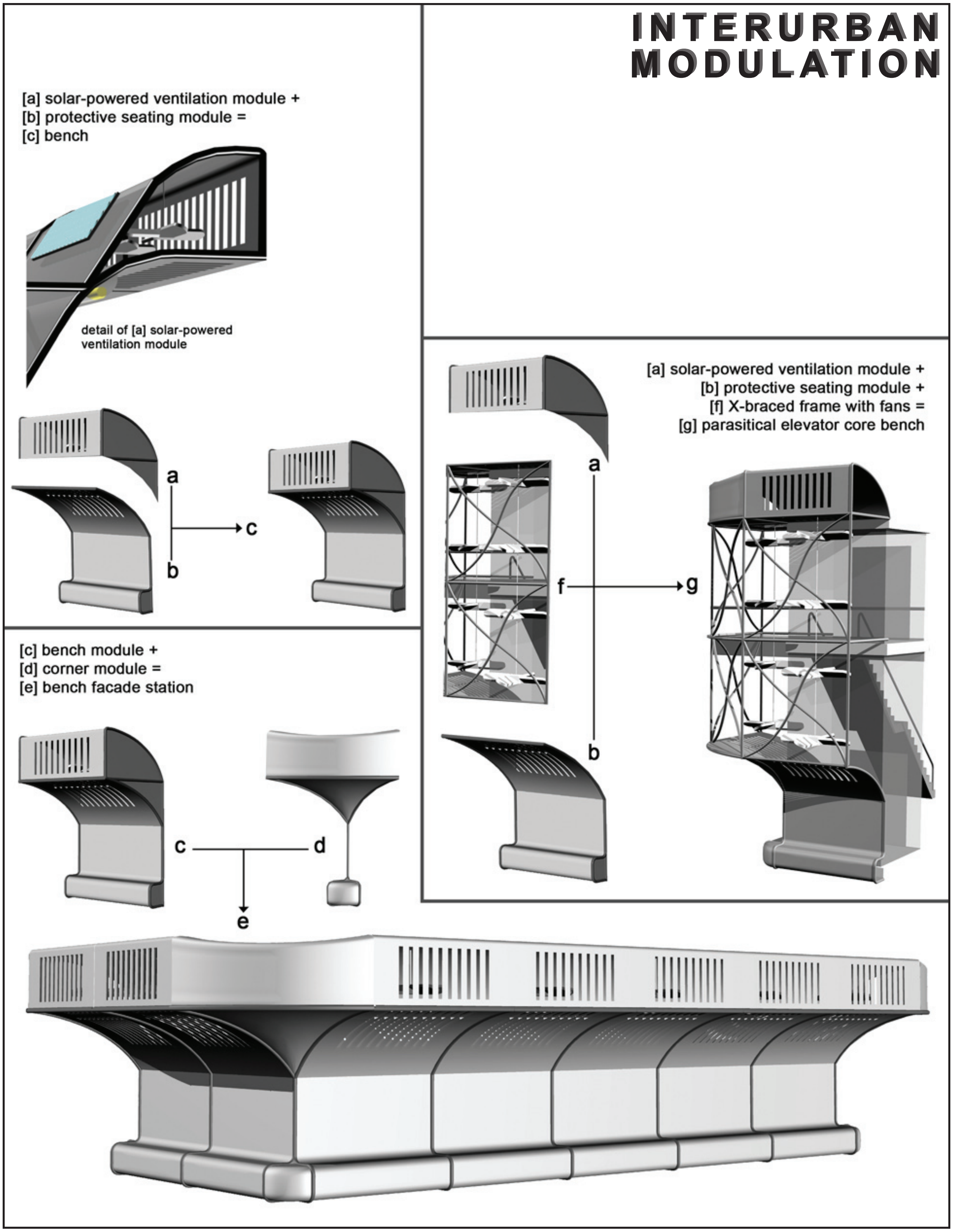


Figure 5.24 Interurban Modulation Diagram

SOUTHERN CRESCENT   Node Type: InterUrban

Figure 5.25 Southern Crescent Node in GIS/CAD

This module serves to vary and adjust itself to different needs and uses. The Southern Crescent site is the only node that approaches a station – for commuter rail from Lovejoy, local buses, and airport shuttle buses. There is no MARTA station to attach to for service needs – specifically, a bathroom is required. A station is defined by resting and waiting for expected arrivals. The design for the station at Southern Crescent is a clear expression of a seating façade. The wall is the seat – the façade is transformed into an advertisement for transit as cars drive by and are passively involved with it. The corner where Old Dixie Hwy. and Charles W. Grant meet is very active in vehicular terms, and the station will serve to engage the passerbys – people illustrate the façade and belong within it. The module is repeated along the perimeter as a seating module becomes a wall panel. Where two panels meet at 90 degrees, a corner panel is inserted to complete the building. The exterior seating is mirrored to create enclosed seating in the interior. The solar-powered ventilation in this case is brought in to cool both interior and exterior.

Figure 5.26 Southern Crescent Site Plan

The Georgia Passenger Rail Authority located the Southern Crescent station so there will be a connection to the international terminal on the east side of the Hartsfield-Jackson airport. The East Point Station is the western connection to the airport. There will be shuttles running from Southern Crescent to the airport. The local bus system, C-Tran, currently runs by this corner to Loop Road at the airport.

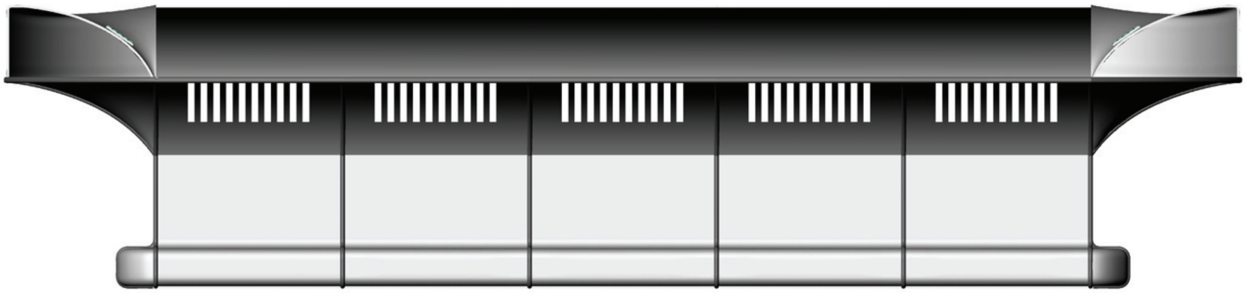


Figure 5.27 Elevation

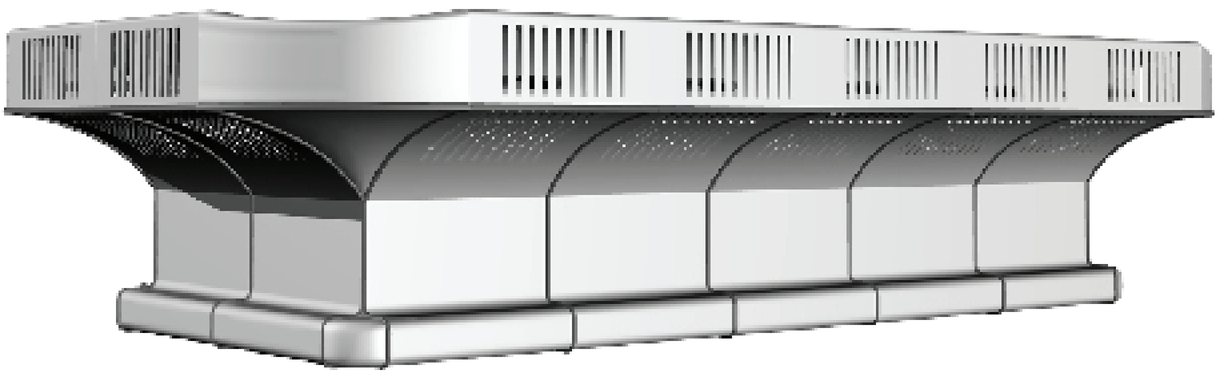


Figure 5.28 View From Southeast

Figure 5.29 View From Above - Detail of Solar-Powered Ventilation

Figure 5.30 Illustration of Southern Crescent Station

SOUTHERN CRESCENT SITE DOCUMENTATION


Figure 5.31 Southern Crescent Site View 01

Figure 5.32 Southern Crescent Site View 02


Figure 5.33 Southern Crescent Site View 03

Figure 5.34 Southern Crescent Site View 04

Figure 5.35 Southern Crescent Site View 05

Figure 5.36 Southern Crescent Site View 06

EAST POINT — Node Type: InterUrban

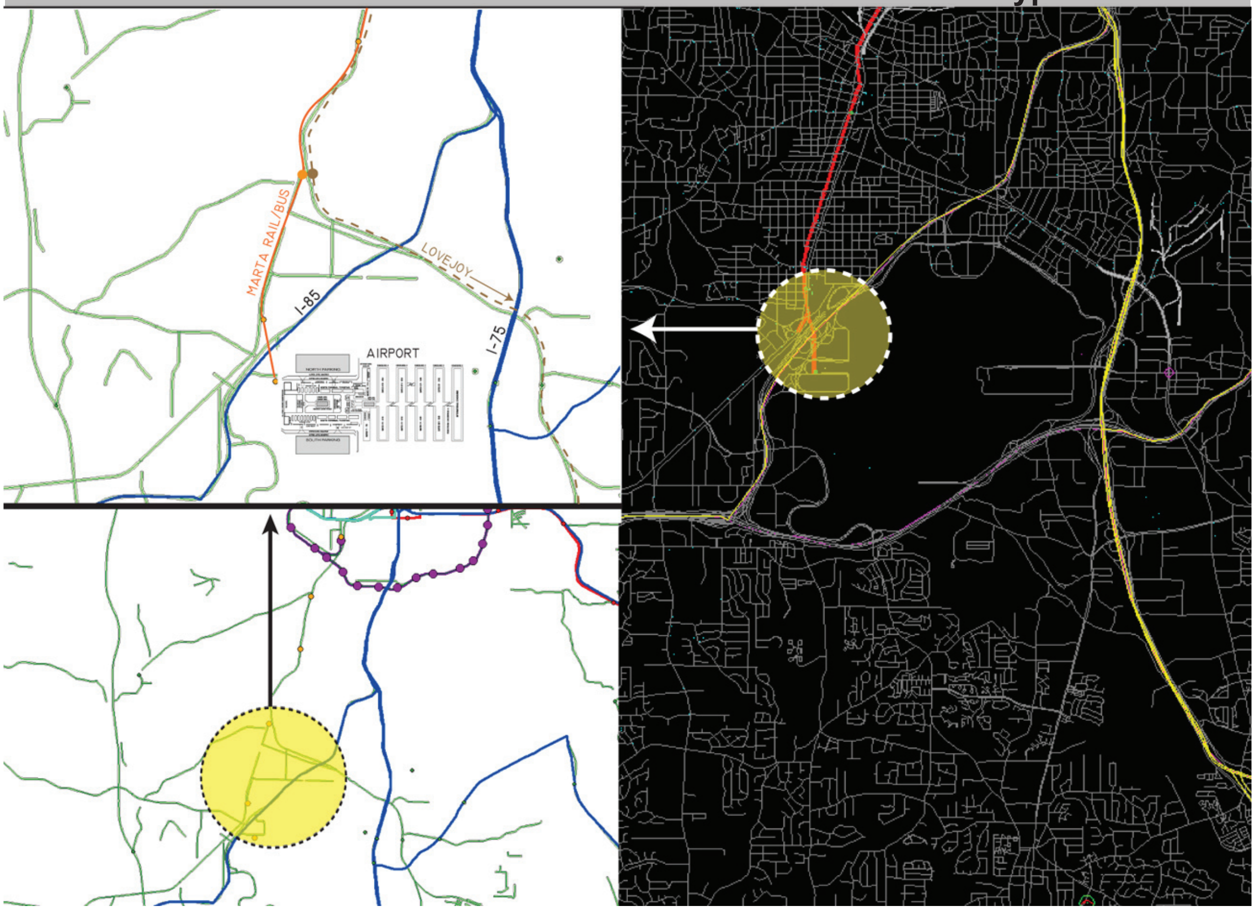


Figure 5.37 East Point Node in GIS/CAD

The East Point and Emory designs use the modules with a similar conception. These two designs are interurban pieces of useful public art. The East Point node includes a MARTA station, and the Emory node includes an old train depot – therefore, the design is for supporting connections. At these locations, the programmatic and environmental needs are simpler than at the urban nodes - Garnett and Lindbergh for example. These designs are about how a person effectively crosses commuter rail tracks to make a connection to MARTA rail. The elevator and stair are the root of this connection – it must be as quick as possible. The modules become a parasite on the elevator core, clinging to its structure. The ventilation module is pulled to the top of the elevator core, and into the space between the seating module and ventilation module is inserted an X-braced frame with fans. More fans are needed to circulate and direct the air downwards – the design includes four.

The X-braced frames have programmed panels hung on their exteriors to serve as useful public art. These panels serve to provide a semi-enclosure so air is trapped and forced down to the seating. They also serve the commuters and Emory students who come into contact with them. The benches are planned to orient the waiting passenger so they are looking at the train as it approaches. The panels are directly related to who is likely to be sitting on the bench beneath them. For commuters, LED data screens with news updates are running. As they make their

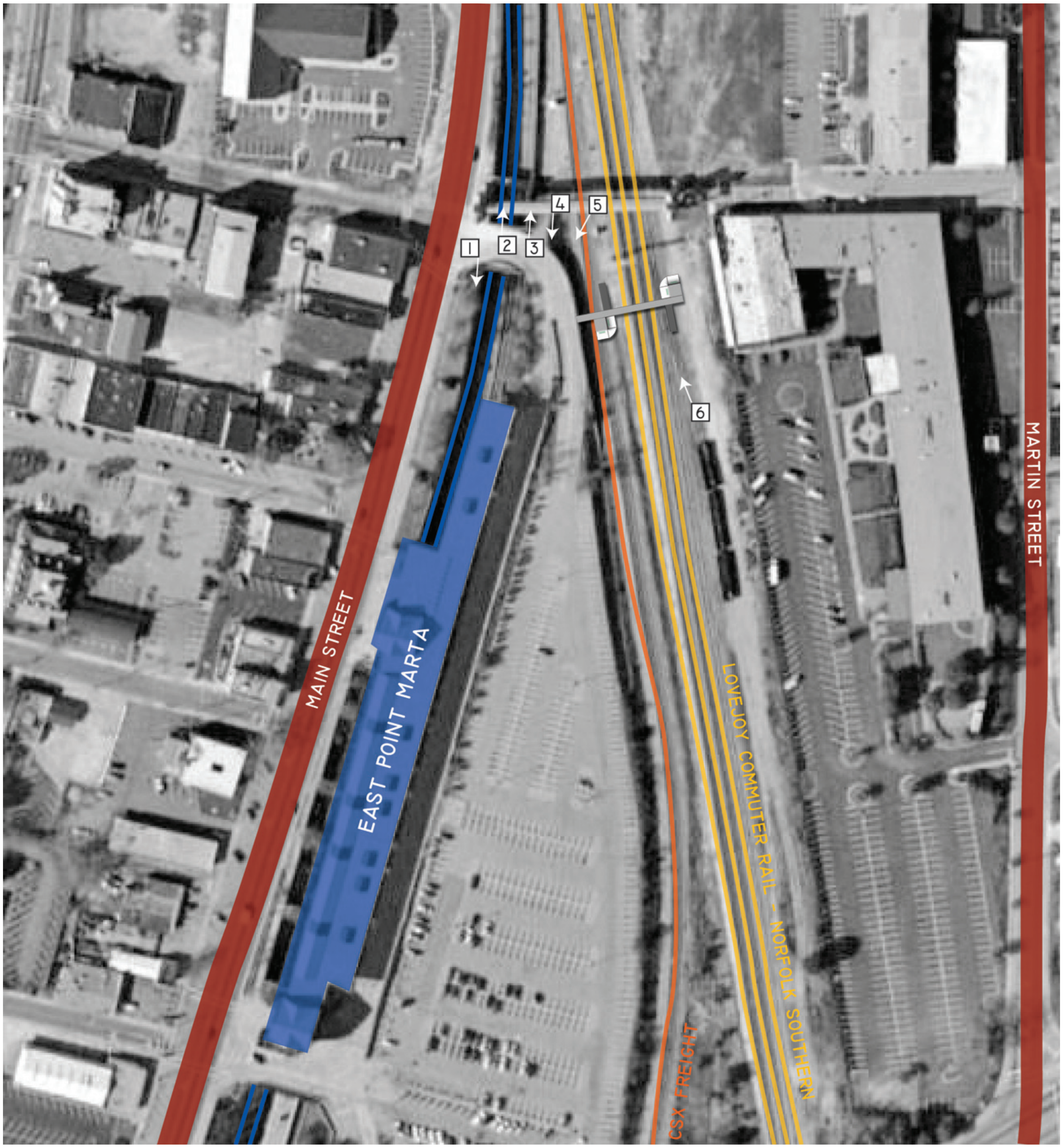


Figure 5.38 East Point Site Plan

way into the city, they can get the news they would have heard on the radio in their car. It is reminiscent of data screens on top of New York City taxicabs. As the commuter rail will bring in many people who previously did not have the opportunity to work in Atlanta, happenings should be advertised to engage them with activity in the city itself. Productions at the Fox such as Evita will be advertised; eventually, it should be like 'Creative Loafing' on the wall. Emory students will have LED data screens with Emory news and advertisements of campus activities to engage the students within the larger campus as they wait. The panel for commuters on their way home is left open with crawling plants, a peaceful approach for the end of the work day.

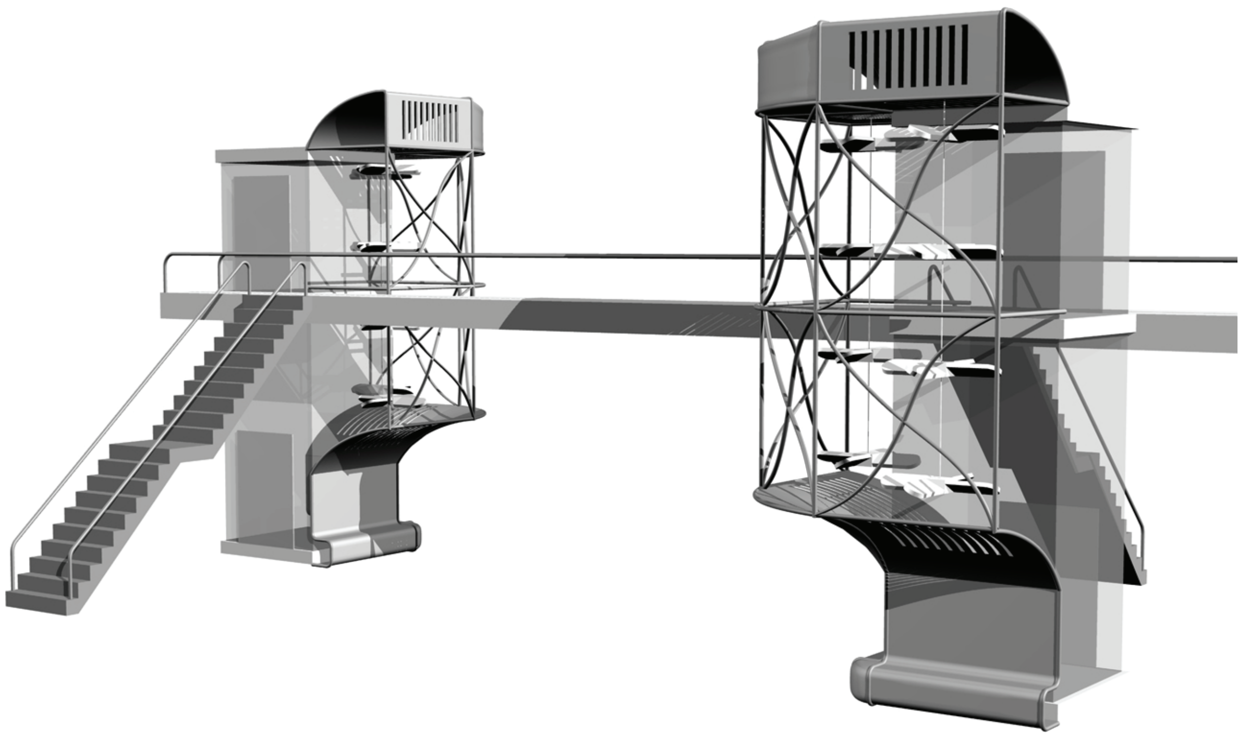


Figure 5.39 View From Southeast

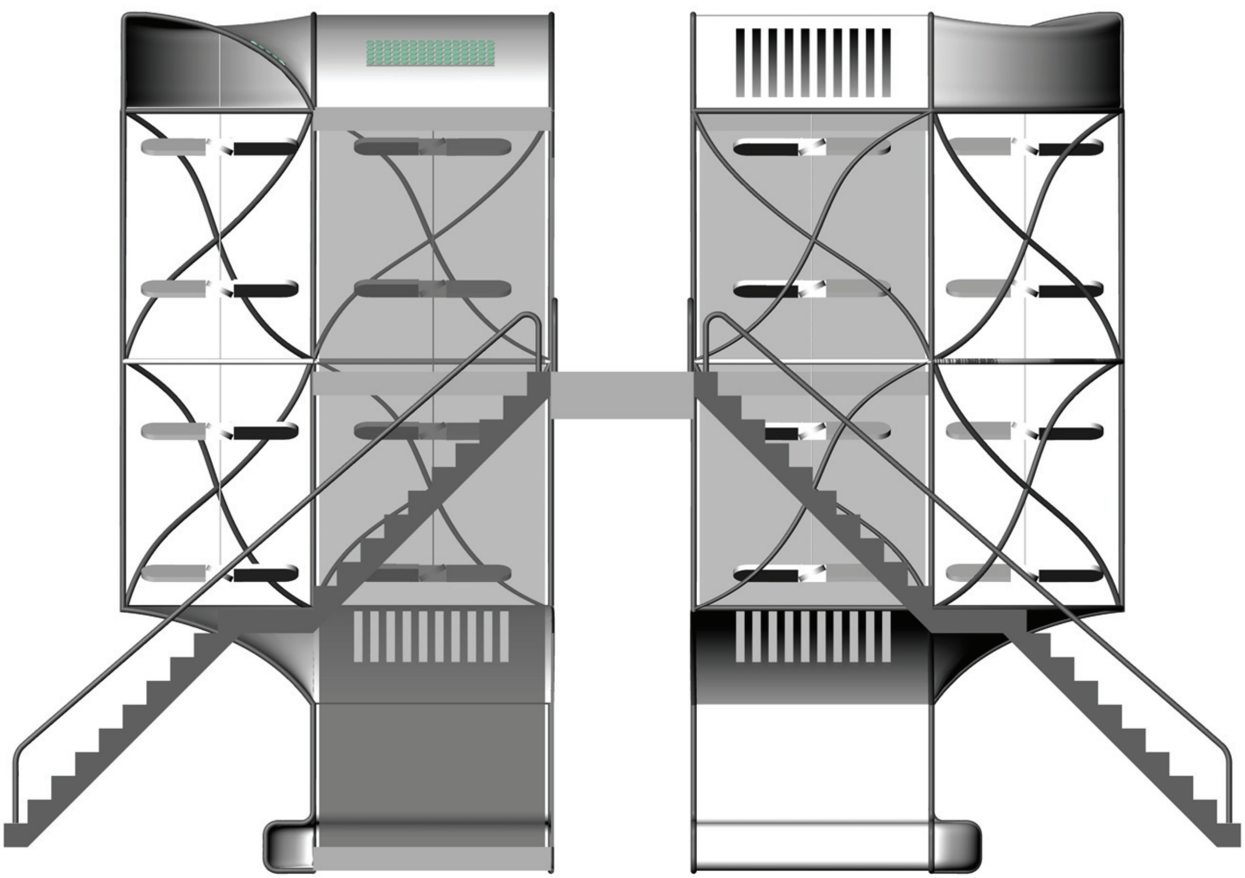


Figure 5.40 Elevation

Figure 5.41 Illustration of Design Connecting Commuter Rail to East Point MARTA

EAST POINT SITE DOCUMENTATION

Figure 5.42 East Point Site View 01

Figure 5.43 East Point Site View 02

Figure 5.44 East Point Site View 03


Figure 5.45 East Point Site View 04


Figure 5.46 East Point Site View 05


Figure 5.47 East Point Site View 06

EMORY — Node Type: InterUrban

Figure 5.48 Emory Node in GIS/CAD

The conception of the transfer within the Emory node is very similar to the treatment of East Point. The Emory node connects Clifton Light Rail to commuter rail from Athens on the ‘Brain Train.’ It is a likely scenario that those coming into the city on commuter rail will connect to Clifton LRT at this point to connect to Lindbergh MARTA [the northern boundary of the line] so they can travel on MARTA HRT northbound to the business area of Buckhead. Emory still has its old depot intact; it is currently in use as a campus café. This stop is the first inside the city limits along the ‘Brain Train.’

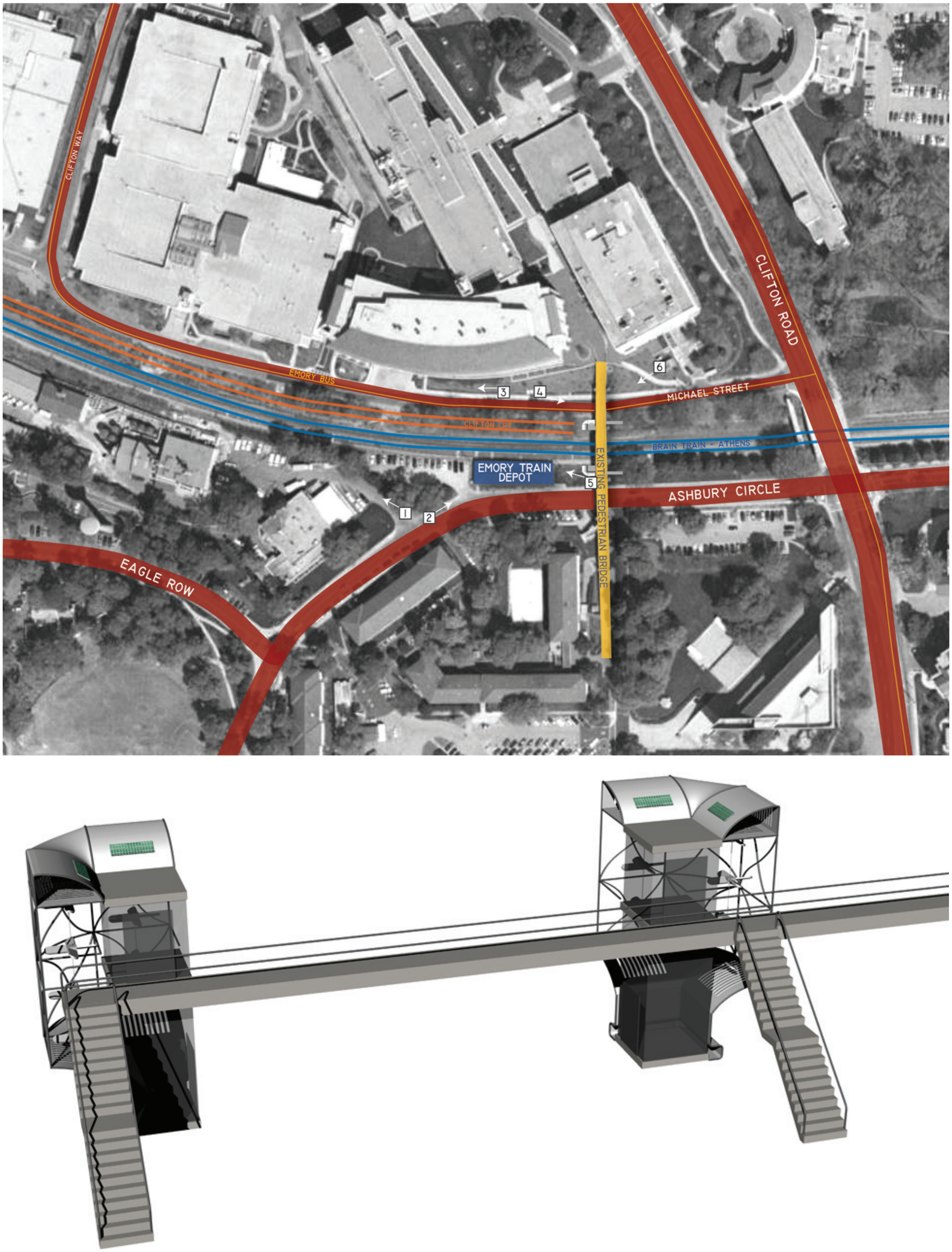


Figure 5.49 Emory Site Plan and Elevator Core Attachment

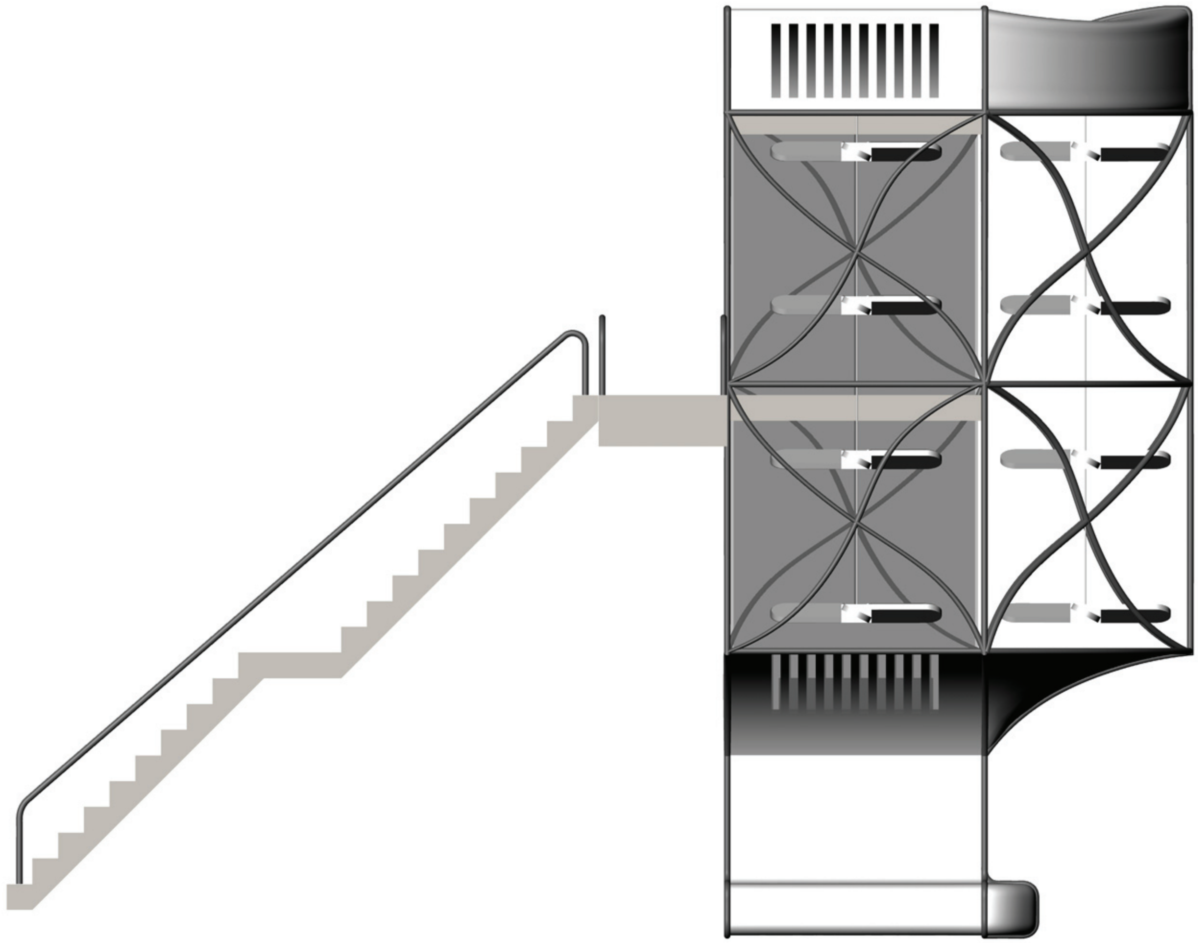


Figure 5.50 Elevation

Figure 5.51 Detail of X-Frame Panel Concept

Figure 5.52 Illustration of Commuter Rail Connecting to Existing Pedestrian Bridge

EMORY SITE DOCUMENTATION

Figure 5.53 Emory Site View 01

Figure 5.54 Emory Site View 02

Figure 5.55 Emory Site View 03

Figure 5.56 Emory Site View 04

Figure 5.57 Emory Site View 05

Figure 5.58 Emory Site View 06

KENSINGTON Node Type: Peripheral

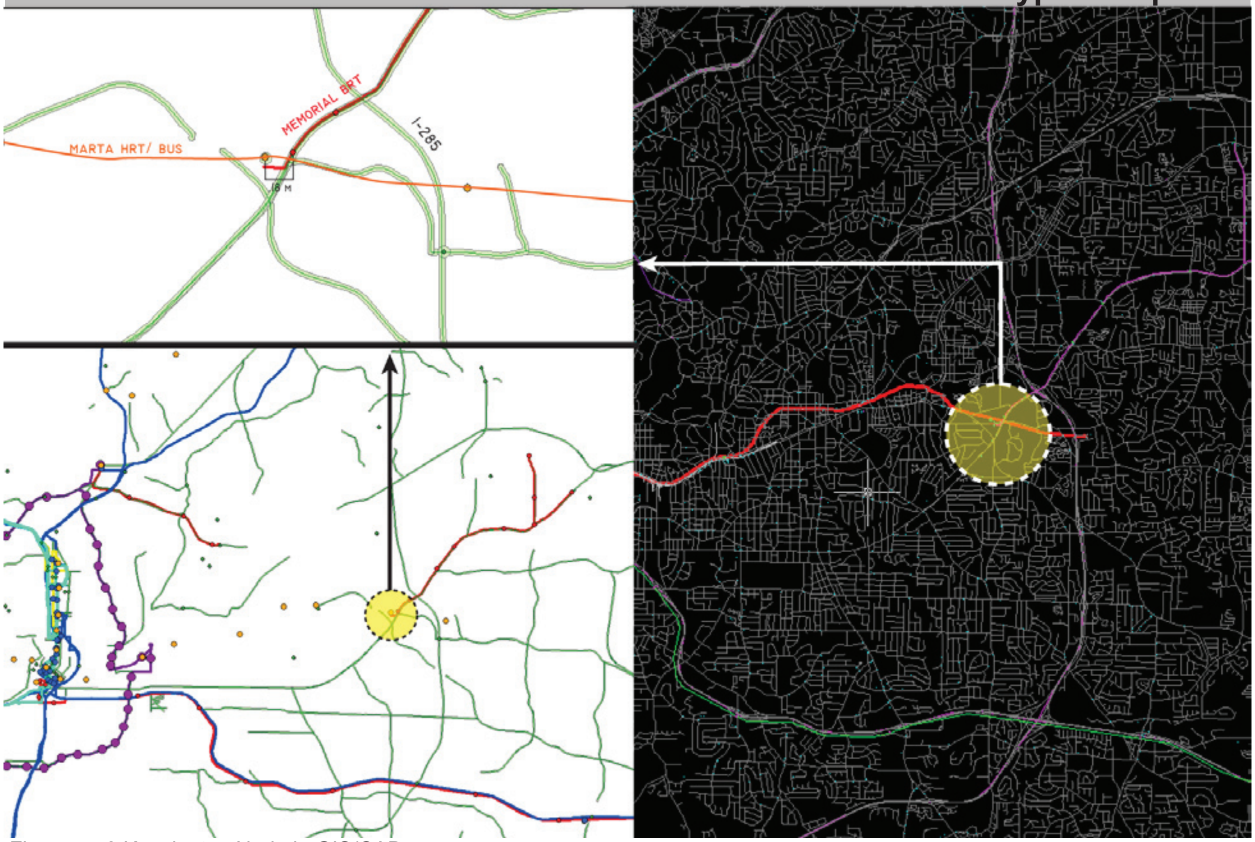


Figure 5.59 Kensington Node in GIS/CAD

This design is an extension of MARTA to accommodate Memorial drive Bus Rapid Transit [BRT]. With both BRT lines having farside stops, this locates MARTA at their center. The new main public space is above the MARTA tracks atop the tunnel bordering Memorial Drive. An elevator and staircase will be attached to this platform to bring those transferring from BRT directly to MARTA rail through this connection. This prevents the transit user from being forced to walk around the building to come back to a place very near to where they exited the BRT. The MARTA breeze card works for a specified length of time, and the BRT will be included in their coverage. At the top of the stairs and elevator, a gate with card scanner will grant or forbid access.

This project deals primarily with surfacing, since the connections are made over the streets to access MARTA rail. After exiting the BRT, the transit user walks along a tree-lined path which shields them somewhat from the bustle of traffic beside them to arrive at the triangle [the space that is created when a right turn lane is separated from the others.] The triangle functions as a space to pass through, but it is also equipped with a bench for waiting on the BRT. The crossing at Memorial Drive uses ribbed concrete pavers turned 45 degrees for a tactile change that can be sensed by the visually disabled. The transition platform becomes a public space on this busy vehicular corner. In the exurbs, where few people get out of their car to walk, people will begin to walk around and inhabit this street corner. The platform will be activated with the movement of people getting to their next destination and the stagnation of waiting; these people are put on display for the vehicles passing by. Benches and vegetation will soften the space, inviting people to participate or observe.

Figure 5.60 Kensington Site Plan

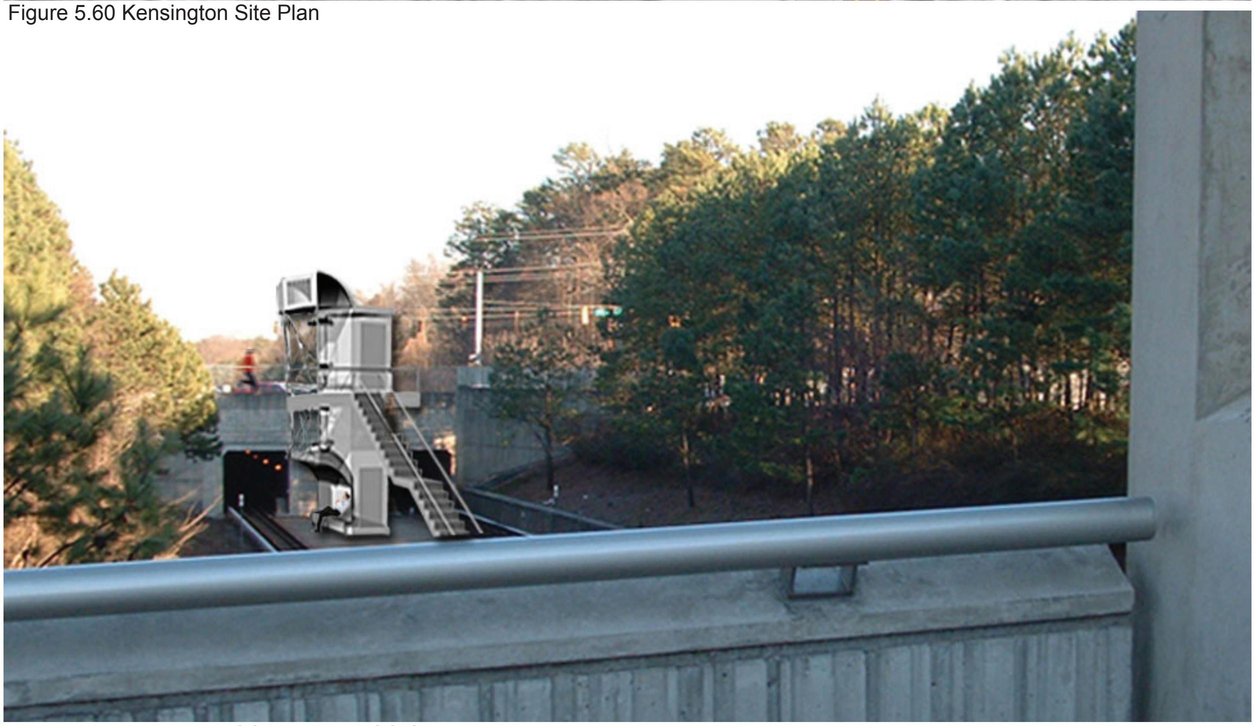


Figure 5.61 Illustration of Connection of Clifton Light Rail to Kensington MARTA

KENSINGTON SITE DOCUMENTATION

Figure 5.62 Kensington Site View 01

Figure 5.63 Kensington Site View 02

Figure 5.64 Kensington Site View 03

Figure 5.65 Kensington Site View 04


Figure 5.67 Kensington Site View 05


Figure 5.68 Kensington Site View 06


Figure 5.69 Kensington Site View 07

H.E. HOLMES Node Type: Peripheral

Figure 5.70 HE Holmes Node in GIS/CAD

H. E. Holmes MARTA will meet Westline BRT. The Westline is very small, running from Holmes in the east out westbound to two stations - Adamsville and finally Fulton Industrial Blvd. [FIB]. As BRT runs in HOV lanes, stops are designed to be inserted into the interstate connecting to a street crossing above. This is likely how MARTA has planned the Adamsville and FIB stops to function. Where the BRT will meet the MARTA station is an interesting situation. Originally approached as a stop like the other two, it eventually became clear that it is more likely the BRT will simply run in a loop getting off the interstate to pick passengers up in the existing station bus area. The buses used for the BRT will run west, loop around to head east - making a loop in Holmes MARTA to pick up passengers. The city is not likely to invest in a separate stop when the MARTA station is so close, and since the path necessitates a loop – it follows that this is the most likely way this connection will function.

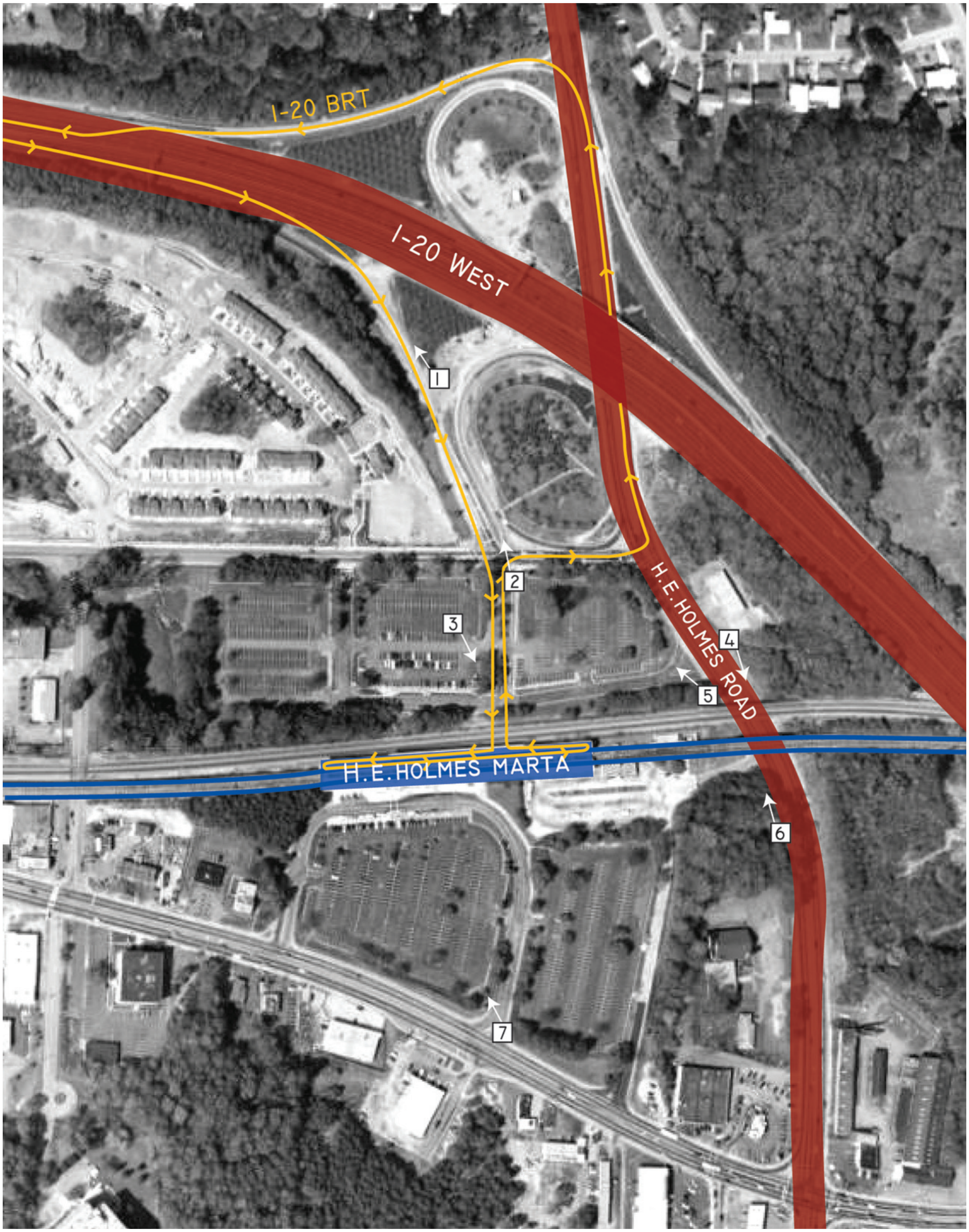


Figure 5.71 HE Holmes Site Plan

HOLMES SITE DOCUMENTATION

Figure 5.72 HE Holmes Site View 01

Figure 5.73 HE Holmes Site View 02

Figure 5.74 HE Holmes Site View 03

View 03

Figure 5.75 HE Holmes Site View 04


Figure 5.76 HE Holmes Site View 05


Figure 5.77 HE Holmes Site View 06


Figure 5.78 HE Holmes Site View 07

CUMBERLAND — Node Type: Peripheral

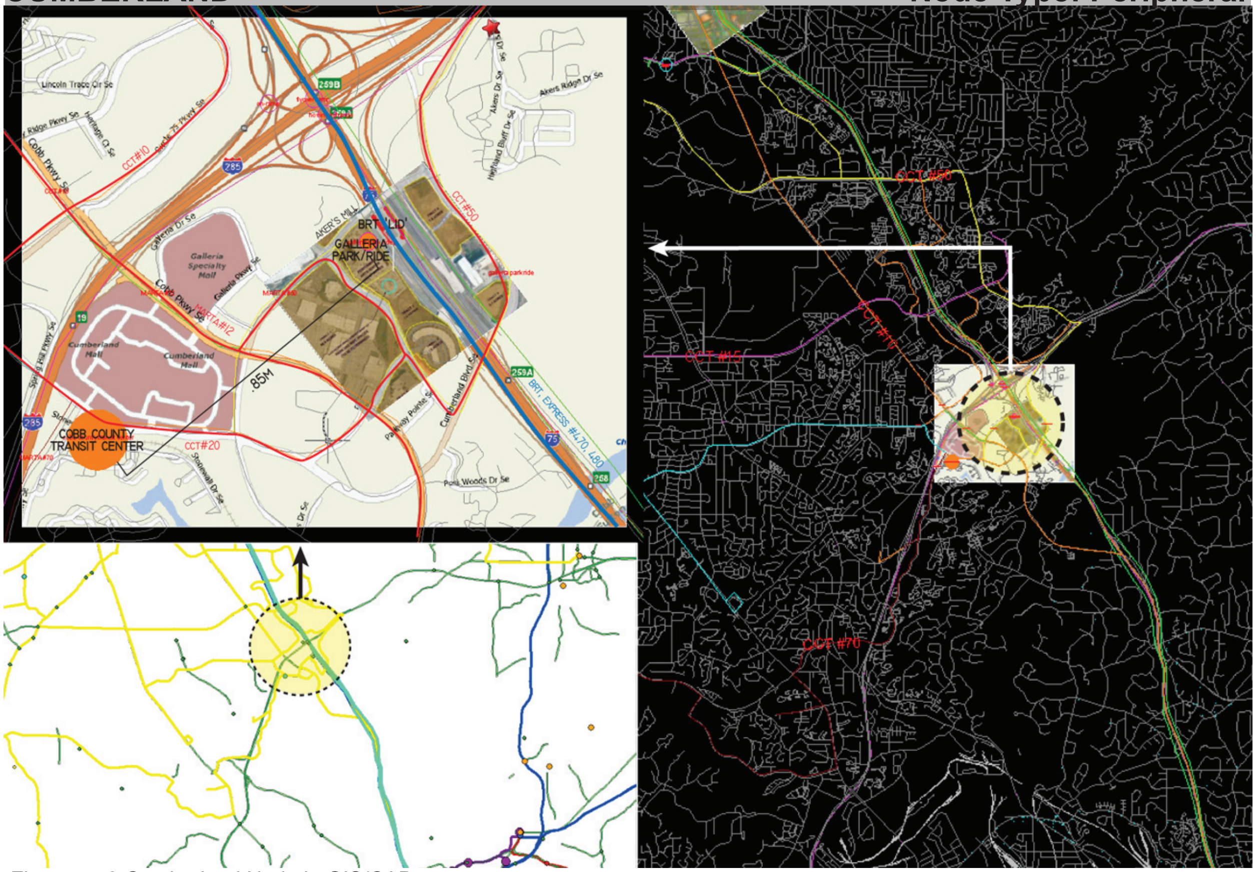


Figure 5.79 Cumberland Node in GIS/CAD

This peripheral node is a mini-city outside of the city of Atlanta - it functions independently with its own business district and a bustling area of commerce – especially the Cumberland Mall. It is extremely congested, and the development immediately off of the interstate is concentrated in a relatively small area. BRT is planned to run through this node along I-75 to allow people a way into Atlanta with an alternative to driving the car. The BRT stop will be near the currently constructed Performing Arts Center on Aker's Mill Road. This area in Cobb County has successful local bus service with high ridership, and it is important that the BRT make a successful connection to the Cobb County Transit Center. The transit center is actually only .85 miles away on a straight linear path, but considering the surrounding streets, the distance is not considered walkable – especially in this vehicular-dependant area. It seems likely that there will be a shuttle running from the transit center to the BRT or that the buses will be re-routed, making several stops along the path to BRT.

The stops may be inserted into currently unused space - filler areas. These spaces are activated with the types of occurrences you pass on a busy street in the city. Kiosques, moveable vendors, able to adapt to changes in program, will be invited to set up shop. It is very possible that

Figure 5.80 Cumberland Site Plan

BRT will become the gateway into the city, and the local transit centers are the gateway to access within the counties. The linking of these two transit paths will occur through these spaces that make the path interesting. They may not operate all day long – at least morning, lunchtime, and evening. Examples of the types of program are flower vendors, fruit and vegetable vendors, musicians, girl scouts selling cookies, kids selling candy bars for the band, adopt-a-pet services, firework stands for the Fourth of July, or kids selling lemonade in August. The things that take place in front of malls and Targets as well as things that take place on busy urban street corners will all be taken into consideration as possibilities. This way, these activities are brought into the public – the public in this area is what drivers see as they are passing. This concept gives vehicles something to pass by other than strip malls, gives vendors a place to fit in, and brings a bit of humanity to the shuttle stops.

Figure 5.81 View of Shuttle Stop Near BRT Platform

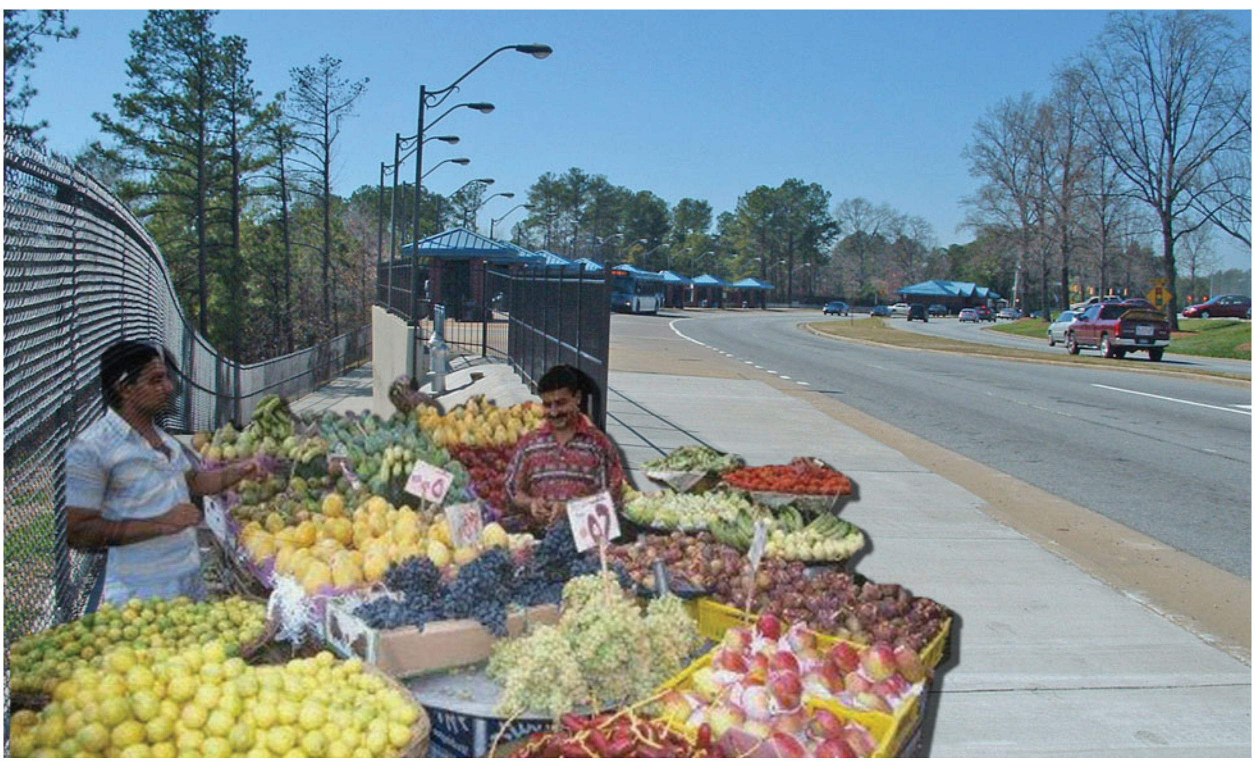


Figure 5.82 View of Shuttle Stop Near Cobb County Transfer Center

CUMBERLAND SITE DOCUMENTATION

Figure 5.83 Cumberland Site View 01

Figure 5.84 Cumberland Site View 02

Figure 5.85 Cumberland Site View 03

Figure 5.86 Cumberland Site View 04

Figure 5.87 Cumberland Site View 05

Figure 5.88 Cumberland Site View 06

MARIETTA Node Type: ExUrban

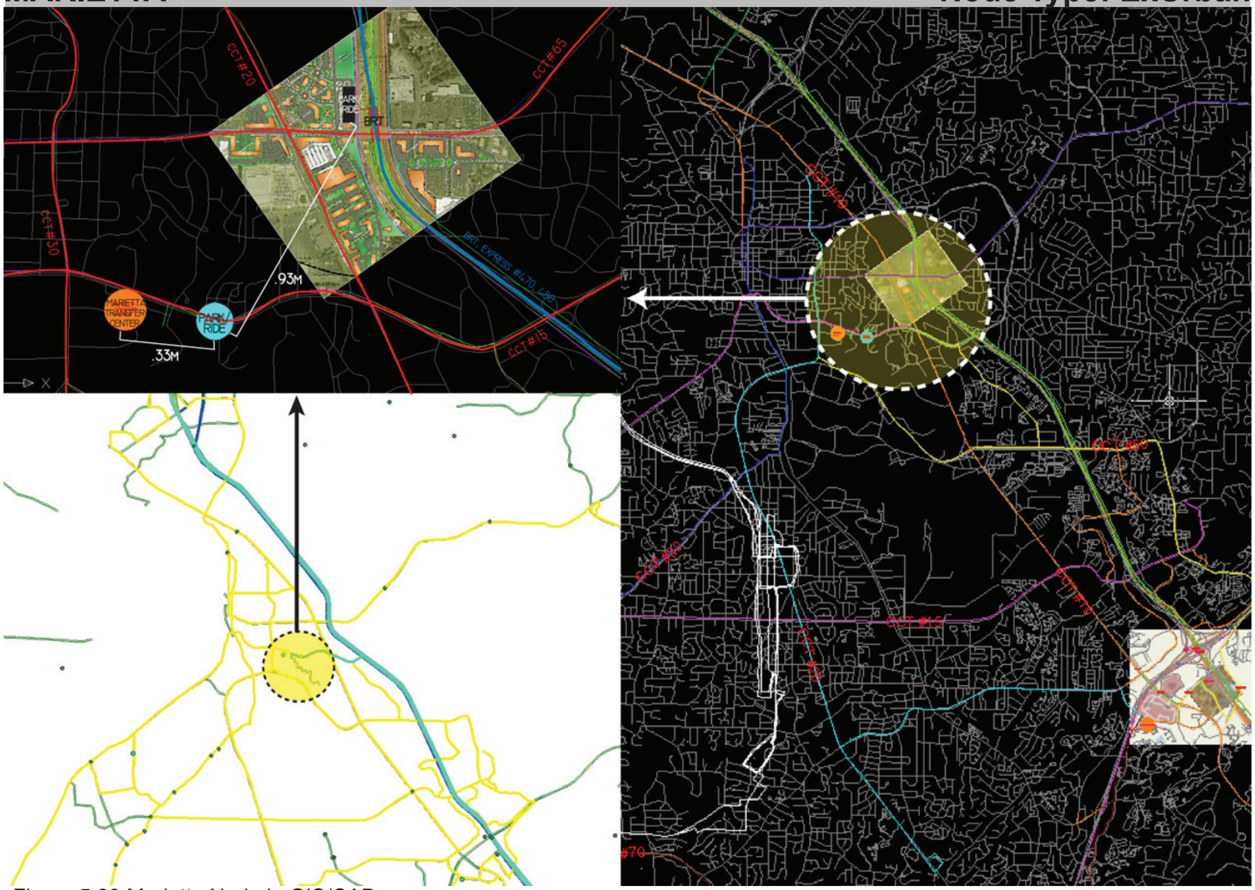


Figure 5.89 Marietta Node in GIS/CAD

The Marietta node is similar to the Cumberland node. The Marietta Transfer Center and park and ride facilities are .93 miles from the proposed BRT location along Roswell Road. The conceptual design for this node is akin to the treatment of Cumberland Mall.

Figure 5.90 View of Shuttle Stop Near Marietta County Transfer Center

Figure 5.91 View of Shuttle Stop Near BRT Platform

Figure 5.92 Marietta Site Plan

MARIETTA SITE DOCUMENTATION

Figure 5.93 Marietta Site View 01

Figure 5.94 Marietta Site View 02

Figure 5.95 Marietta Site View 03

PANOLA ROAD Node Type: ExUrban

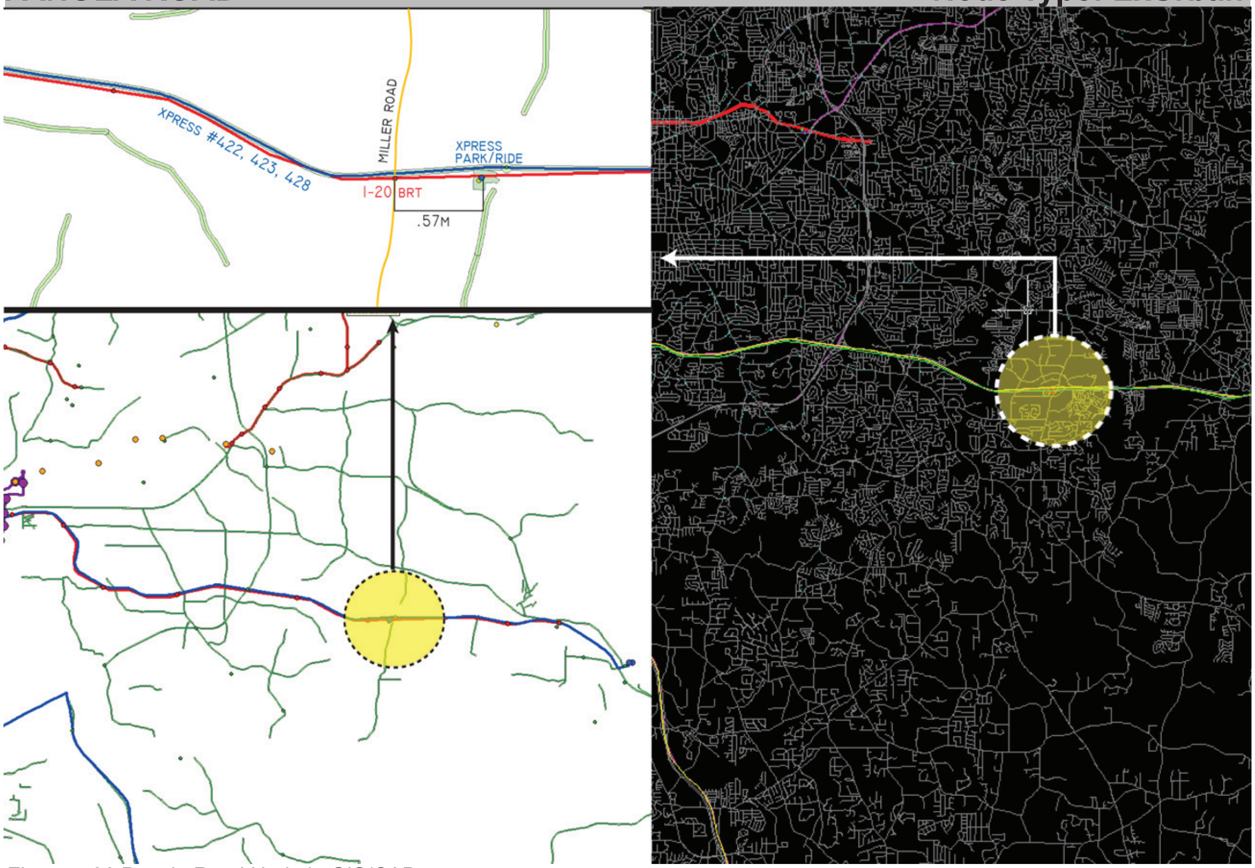


Figure 5.96 Panola Road Node in GIS/CAD

Currently, a park and ride lot is under construction for Xpress buses 422,423, and 428 running along I-20 East. The lot is at the southwestern corner of the intersection of I-20 and Panola Road. A proposal has been made for BRT to run along I-20 East, and the BRT platform will be located on Miller Road - .57 miles to the west of the park and ride lot. The intersection of I-20 and Panola Road is extremely congested, so it makes sense that the BRT would connect at a close location to Panola. It is likely that the .57 miles will be considered an unwalkable distance by exurbaners. The solution is a parking connection. An industrial corridor runs along the northern edge of Fairington Road. The backs of these buildings face Chatooga Drive – a short industrial access road bordering the interstate. The design proposes that Chatooga Drive extends eastward to the Xpress park/ride lot to make a vehicular connection between the two transit types. A series of skate ramps will serve as the wind and noise barrier from the interstate. As pedestrians walk along the sidewalk between the BRT and Xpress park/ride, the skateboarders will serve as an interesting backdrop of movement in a place which is currently very stagnant. It will also give young adults a place to go, bringing them near to transit – therefore, increasing the likelihood they will use it.

Figure 5.97 Panola Road Site Plan


Figure 5.98 Illustration of Panola Road Parking/Skate Ramps

PANOLA ROAD SITE DOCUMENTATION

Figure 5.99 Panola Road Site View 01

Figure 5.100 Panola Road Site View 02

Figure 5.101 Panola Road Site View 03

Figure 5.102 Panola Road Site View 04

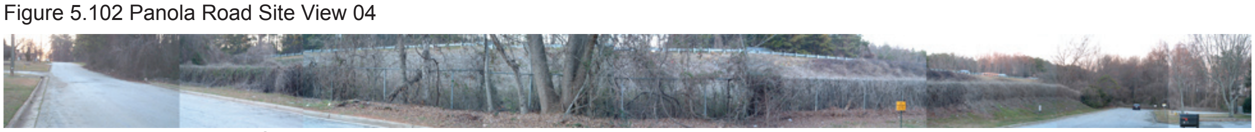


Figure 5.103 Panola Road Site View 05 View 05

Figure 5.104 Panola Road Site View 06

View 06

Figure 5.105 Panola Road Site View 07

View 07

Figure 5.106 Panola Road Site View 08

View 08

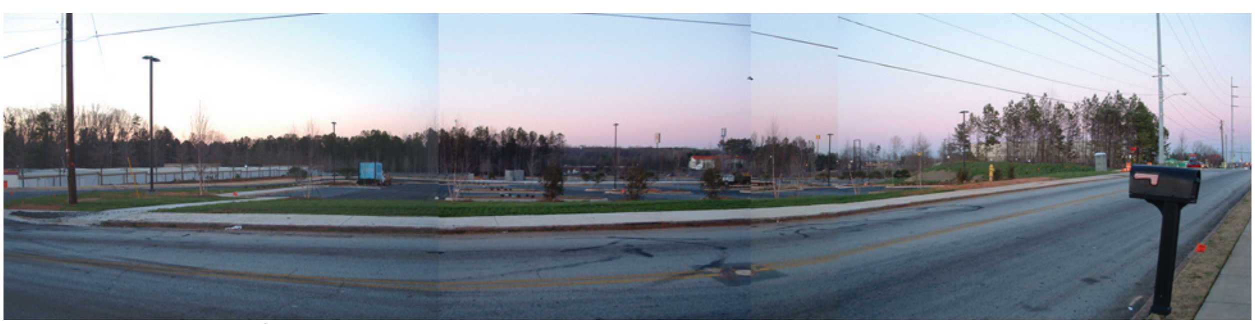


Figure 5.107 Panola Road Site View 09

View 09

Literature Cited

Bakker, Daan. Architecture in the Netherlands. Rotterdam: NAI, 2004-2005.

Barley, Nick. Breathing Cities: The Architecture of Movement. London: Birkhauser, 2000.

Cortes, J. A. “Delirious and More: The Lessons of the Skyscraper, Strategy vs. Architecture.” El Croquis. 2006: entire issue.

Dobbins, Michael. “Focusing Growth Amid Sprawl: Atlanta’s Livable Centers Initiative.” Places. Summer 2005: 20-23.

DuBois, W.E.B. The Souls of Black Folk. New York: Kessinger, 2004.

Gerfen, Katie. “Glass Ceiling.” Architecture. Feb. 2005: 51-52.

Hanson, Robert H. Safety, Courtesy, Service: History of the Georgia Railroad. Johnson City: Overmountain Press, 1996.

Herrmann, Hans. “Public Domain and the Dispersed City.” Architecture Journal. Sep. 2004: 192-199.

Hoete, Anthony. Reader on the Aesthetics of Mobility. London: Black Dog, 2003.

Holtzman, Anna. “Zaha Hadid Architects: High-Speed Train Station Napoli-Afragola.” Architecture. May 2004: 41.

http://dot.cobbcountyga.gov, Cobb County. Nov. 27, 2006.

http://jolomo.net/atlanta.html, Homepage de Jolomo. Feb. 11, 2007.

http://msit.gsu.edu/dhr/pullen/selections.asp?id=fivepoints, Georgia State University. Feb. 10, 2007.

http://web.co.clayton.ga.us, Clayton County. Nov. 27, 2006.

http://www.aia.org/aiarchitect/thisweek05/tw0325/0325pw_bike.htm, AIArchitect. Feb. 5, 2007.

Jones, Ellen Dunham. “Smart Growth in Atlanta: A response to Kreiger and Keifer.” Harvard Design Magazine. Fall 2003/ Winter 2004: 61-66.

Martin, Harold H. Atlanta and Environs : A Chronicle of Its People and Events [Volumes I,II,III]. Athens, GA; University of Georgia Press, 1987.

Meeks, Carroll Louis Vanderslice. The Railroad Station: An Architectural History. New Jersey: Castle Books, 1978.

"Mobility 2030: Regional Transportation Plan" CD-ROM. Atlanta Regional Commission: 2006.

Modelski, Andrew M. [compiler]. Railroad maps of the United States : A Selective Annotated Bibliography of Original 19th-Century Maps in the Geography and Map Division of the Library of Congress. Washington : The Library, 1975.

Nadal, Sara, and Carles Puig. Planning the Periphery. Barcelona: Gustavo Gili, 2002.

Pollard, Trip. "Reinventing Growth." Urban Land. June 2003: 52-59.

Ramos, Rachel Tobin. "Private Bus Service on a Roll" Atlanta Business Chronicle. Jan. 14, 2005.

Reps, John W. The Making of Urban America: A History of City Planning in the United States. New Jersey: Princeton University Press, 1965.

Sendich, Emina. Planning and Urban Design Standards. Hoboken: John Wiley and Sons, 2006.

Stanley, Raymond Wallace. The Railroad Pattern of Atlanta. Chicago: University of Chicago [thesis], 1948.

"UN Studio: Arnhem Central, Arnhem, the Netherlands." GA Document. June 2006: 44-47.

Withuhn, William L. [consultant editor]. Rails Across America: A History of Railroads in North America. London: Salamander Books Limited, 1993.

www.amtrak.com, Amtrak. Nov. 10, 2006.

www.atlanta-airport.com, Hartsfield-Jackson Airport. Jan. 10, 2007.

www.atlantaregional.com, Atlanta Regional Commission, Nov. 2, 2006.

www.atlantastreetcar.com, Atlanta Streetcar, Inc. Nov. 27, 2006.

www.bucride.com, The Buc. Jan. 15, 2007.

www.cfpt.org, Citizens for Progressive Transit. Nov. 22, 2006.

www.co.gwinnett.ga.us, Gwinnett County. Nov. 27, 2006.

www.dot.state.ga.us, Georgia Department of Transportation, Nov. 30, 2006.

www.flexcar.com, Flexcar. Jan. 15, 2007.

www.dot.state.ga.us/dot/grpa, Georgia Rail Passenger Authority. Jan. 18, 2007.

www.garail.com, Georgia Rail Passenger Program. Nov. 15, 2006.

www.grta.org, Georgia Regional Transportation Authority. Nov. 10, 2006.

www.itsmarta.com, Metropolitan Atlanta Rapid Transit Authority. Nov. 10, 2006.

www.perimetergo.org, Perimeter Transportation Coalition. Nov. 18, 2006.

www.railga.com, Georgia's Railroad History and Heritage. Nov. 10, 2006.

www.sos.state.ga.us/tours/html/atlanta_history.html, State of Georgia. Jan. 10, 2007.